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Chapter 1 of Exploring the 6 Cs (21st Century Learning)

CHARACTER A

SOCIAL-EMOTIONAL LEARNING (SEL)

SECTION A. Growth Mindset Survey + Puzzles

version: v2022-07-27

START HERE

👋 Need a hand? Email me! Mike@educircles.org

INSTRUCTIONS:

STEP 1: Open the slideshow lesson.

- [Google Slides](#) or [Microsoft PowerPoint](#)

STEP 2: Print this PDF file.

- It has the handouts and lesson plan.

WHAT'S IN THIS PDF:

- This title page and links to specific files (File Table of Contents)
- Review Questions - Lessons A1, A2, A3
- Handout - What do you believe survey, Slideshow Puzzle, Puzzle Package
- Answers - What do you believe survey, Slideshow Puzzle, Puzzle Package
- Lesson Plan
- About Educircles, License, Copyright, Sources, Changelog

WHAT'S NOT IN THIS PDF:

- Slideshow (use the links at the top of this page.)
- Digital Handouts (use the Easel by TpT links provided in this document.)

Want to download
or edit a specific file?

Click the links on
the next page!

Instructions

What's in this
PDF

What's NOT
in this PDF

6Cs Character A - START HERE - Page 1 of 11

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Print this PDF

(it has all of the handouts)

File Table of Contents

BIG PICTURE

What do I need	File Name	File type	Get the file
Lesson Plan	Lesson Plans - Section A <ul style="list-style-type: none">Detailed script with slide thumbnails.Slide Number Comparison Chart	PDF	one-click copy
Lesson	Slideshow - Section A (slides 1-133)	Google Slides	one-click copy
		Microsoft Powerpoint ⁽¹⁾	one-click copy
Digital Handouts	Easel by TpT - Section A - ALL This Easel by TpT file has all of the handouts for this section combined into one document. <ul style="list-style-type: none">PRO TIP #1: Delete the pages you don't need before assigning your file to students.PRO TIP #2: You can use the one-click copy link multiple times to create different versions of the virtual handouts. NOTE: If you just want the virtual handouts for a specific lesson, please use the one-click copy link in the FILE TABLE of CONTENTS for that lesson.	Easel by TpT	one-click copy

PDF

Google Slides

Powerpoint

Easel by TpT

(1) If the fonts look messed up in Microsoft Word or Powerpoint, please [watch this video](#).
If you can't edit the Word or Powerpoint file, it's because you're in protected mode. [Read this](#).



Links to files

Use this to
teach in class

Slideshow
from bundle

Slideshow
from product

Individual lesson
slideshow

Assign this in
Google
Classroom

NOTE: Duplicate Slide ALERT!

The same slide has been copied into three separate files.

The **Slide Number Comparison Chart** in the Lesson Plan for **each Section** will tell you which slides match up.

For example, the following slide is



- Slide 91 in **Slideshow - ALL**
- Slide 91 in **Slideshow - Section A**
- Slide 1 in **Slideshow - Lesson A3**

The Lesson Plan will show a thumbnail of the slide and use the slide number from the main slideshow **Slideshow - ALL**.

Different files are used if you teach in class or online.

- Are you teaching in class?
 - Use **Slideshow - ALL** (from the bundle) or **Slideshow - Section A** (from the product) and project to the class.
- Are you creating assignments in Google Classroom, Microsoft Teams, or another LMS?
 - Attach **Slideshow - Lesson A1, A2, A3, and A4** in your assignments.

		Slideshow	
		Section A	Lesson A3
Lesson A2		ALL	
CHARACTER - LESSON A2: 45 min Sudoku Round 1 and 2 (slides 80-90)		40-90	40-90 1-51
Sudoku Round 1			
Reviewing Mindset (slide 40-40) - 5 min		40-40	40-40 1-10
What is Sudoku? - 10 min			
Introduction to Sudoku (slides 50-53)		50-53	50-53 11-24
Sudoku (slides 54-58)		54-58	54-58 25-30
Sudoku and Growth Mindset (slides 70-72)		70-72	70-72 31-33
Work period (slide 73) - 5-10 min		73	73 34
Sudoku Strategies #1-3 - 10 min			
Sudoku Strategy 1: Inspection (slide 74-77)		74-77	74-77 35-38
Sudoku Strategy 2: Start with the Most (slide 78-80)		78-80	78-80 39-41
Sudoku Strategy 3: Write down Candidates (slide 81-83)		81-83	81-83 42-44
Sudoku Strategy 4: Work period (slide 84) - 10 min		84	84 45
Lesson A3		ALL	
CHARACTER - LESSON A3: 45 min Sudoku Round 3 and 4 (slides 91-103)		91-103	91-103 1-13
Sudoku Round 3			
Sudoku Strategies #4-6 - 10 min		91-93	91-93 14-16
Sudoku Strategy 4: Do by number (slide 91-93)		91-93	91-93 17-19
Sudoku Strategy 5: Punting (slide 94-96)		94-96	94-96 20-22
Sudoku Strategy 6: Work period (slide 97) - 10 min		97	97 23
Sudoku Round 4			
Sudoku Strategies #7-9 - 10 min		104-106	104-106 14-16
Sudoku Strategy 7: Do by number (slide 104-106)		104-106	104-106 17-19
Sudoku Strategy 8: Punting (slide 107-109)		107-109	107-109 20-22
Sudoku Strategy 9: Work period (slide 110) - 10 min		110	110 23
Sudoku Round 5			
Sudoku Strategies #10-12 - 10 min		111-113	111-113 24-26
Sudoku Strategy 10: Do by number (slide 111-113)		111-113	111-113 27-29
Sudoku Strategy 11: Punting (slide 114-116)		114-116	114-116 30-32
Sudoku Strategy 12: Work period (slide 117) - 10 min		117	117 33

The slide number comparison chart is at the start of each section in the following lesson plans:

Lesson Plan - ALL
(from the bundle)

Lesson Plan - Section A
(from the product)

It is NOT in individual lesson plans
(i.e. **Lesson Plan - Lesson A1**)



Duplicate Slide Alert

LESSON A1 - Introduction / What do you believe survey / Mindset lesson (45 min)

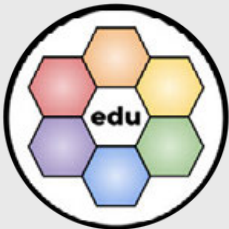
What do I need	File Name	File type	Get the file
Lesson Plan	Lesson Plan - A1	PDF	one-click copy
Lesson	Slideshow - Lesson A1 (slides 1-39)	Google Slides	one-click copy
		Microsoft Powerpoint ⁽¹⁾	one-click copy
Handouts	What do you believe survey	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy
Answers	Answers - What do you believe survey	PDF	one-click copy
Review questions	Review - Lesson A1	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy

Lesson
A1

Google Docs

Word

files are
organized
by lesson



Links to files

LESSON A2 - Sudoku (Round 1 and 2) 40 MIN

What do I need	File Name	File type	Get the file
Lesson Plan	Lesson Plan - A2	PDF	one-click copy
Lesson	Slideshow - Lesson A2 (slides 40-90)	Google Slides	one-click copy
		Microsoft Powerpoint ⁽¹⁾	one-click copy
Handouts	Slideshow Puzzle	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy
	Puzzle Package	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy
Answers	Answers - Slideshow Puzzle	PDF	one-click copy
	Answers - Puzzle Package	PDF	one-click copy
Review questions	Review - Lesson A2	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy

Lesson
A2

files are
organized
by lesson



Links to files

LESSON A3 - Sudoku (Rounds 3 & 4) 45 MIN

What do I need	File Name	File type	Get the file
Lesson Plan	Lesson Plan - A3	PDF	one-click copy
Lesson	Slideshow - Lesson A3 (slides 91-124)	Google Slides	one-click copy
		Microsoft Powerpoint ⁽¹⁾	one-click copy
Review questions	Review - Lesson A3	PDF	one-click copy
		Google Docs	one-click copy
		Microsoft Word ⁽¹⁾	one-click copy
		Online Version: Easel by TpT	one-click copy

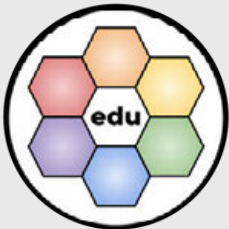
Lesson
A3

LESSON A4 - Sudoku (Round 5) work period 40 MIN

What do I need	File Name	File type	Get the file
Lesson Plan	Lesson Plan - A4	PDF	one-click copy
Lesson	Slideshow - Lesson A4 (slides 125-133)	Google Slides	one-click copy
		Microsoft Powerpoint ⁽¹⁾	one-click copy

Lesson
A4

files are
organized
by lesson



Links to files

Name _____ Class _____ Date _____

CHARACTER



Lesson A1: Mindset Survey

1. What do we mean by character in this lesson?

2. What's the difference between a fixed mindset and a growth mindset

3. How can we change our mindset?

4. What does success mean...

a. to someone in a growth mindset?

b. to someone in a fixed mindset?

Lesson A1

page 1



Review

5. What does failure mean...

a. to someone in a growth mindset?

b. to someone in a fixed mindset?

6. What surprised you the most about the information so far about "fixed mindsets" and "growth mindsets"? Why?

7. Look at your survey results. What surprised you the most about your results? Why?

8. If it turned out that part of Carol Dweck's research was wrong, which part do you think it would be? Why?

Lesson A1

page 2



Review

Name _____ Class _____ Date _____

CHARACTER



Lesson A2: Sudoku puzzle in the slideshow

1. Why is Sudoku not actually a math puzzle?

2. Identify the following vocabulary terms highlighted in each Sudoku puzzle

a. _____

	2					7
4		6	5	8		
5			1		9	
	4	7	6			2
	1	5		4	6	
2		4	9	1		
	6		4		1	
	7	3	8			5
9					8	

b. _____

	2					7
4		6	5	8		
5				9		
	4	7	6			2
	1	5		4	6	
2		4	9	1		
	6		4		1	
	7	3	8			5
9					8	

c. _____

	2					7
4		6	5	8		
5				9		
	4	7	6			2
	1	5		4	6	
2		4	9	1		
	6		4		1	
	7	3	8			5
9					8	

3. Solving a sudoku puzzle requires critical thinking. What are the 3 criteria (rules) that must be followed?

a. _____
b. _____
c. _____

Lesson
A2



4. Solving increasingly difficult sudoku puzzles requires character. What does that mean?

5. What are two phrases that we could say to people working on Sudoku puzzles to help shift them into a Growth Mindset?

a.

b.

6. Do you like Sudoku puzzles? Explain your answer.

7. How might learning how to struggle through Sudoku puzzles help us with tough school assignments, friendship troubles or life uncertainties?

Lesson A2

page 2



Review

Name _____ Class _____ Date _____

CHARACTER



Lesson A3: More sudoku puzzles

1. Explain the Sudoku strategy *Go by Number*

2. Identify 3 other Sudoku strategies explained in the slideshow

a. _____

b. _____

c. _____

3. Out of all of these Sudoku strategies, which one is your favourite? Explain why.

Lesson A3

page 1



Review

4. Based on your experiences so far, has your opinion about Sudoku puzzles changed?
Explain your answer.

Learning how to struggle is an important transferable life skill. (That means we can transfer this skill and use it in many different situations.)

5. How is struggling through a Sudoku puzzle the **SAME** as struggling through a tough school assignment, friendship trouble or life uncertainty? Explain your answer.

6. How is struggling through a Sudoku puzzle **DIFFERENT** from struggling through a tough school assignment, friendship trouble or life uncertainty? Explain your answer.

Lesson A3

page 2



Review

Name _____ Class _____ Date _____

WHAT DO YOU BELIEVE?

Adapted from Dweck, 2006. Mindset: The new psychology of success. Pg. 12 - 13

Read each statement and decide if you agree or disagree. Circle the answer that best fits.

Part 1. Questions about Intelligence

1. Your **intelligence** is something very basic about you that you can't change very much.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

2. You can learn new things, but you can't really change how **intelligent** you are.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

3. No matter how much **intelligence** you have, you can always change it quite a bit.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

4. You can always substantially change how **intelligent** you are.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------



Growth Mindset Survey

page 1



Handouts

Name _____ Class _____ Date _____

Part 2. Questions about **Sports Ability**

5. Your **sports ability** is something very basic about you that you can't change very much.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

6. You can learn new things, but you can't really change how **good you are at sports**.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

7. No matter how much **sports ability** you have, you can always change it quite a bit.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

8. You can always substantially change how **good you are at sports**.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------



Growth Mindset Survey

page 2



Name _____ Class _____ Date _____

Part 3. Questions about **Artistic Talent**

9. Your **artistic talent** is something very basic about you that you can't change very much.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

10. You can learn new things, but you can't really change how **good you are at art**.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

11. No matter how much **artistic talent** you have, you can always change it quite a bit.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

12. You can always substantially change how **good you are at art**.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------



Growth Mindset
Survey

page 3



Name _____ Class _____ Date _____

Part 4. Questions about **Personality** and **Character**

13. You are a certain kind of person, and there is not much that can be done to really change that.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

14. No matter what kind of person you are, you can always change substantially.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

15. You can do things differently, but the important parts of who you are can't really be changed.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------

16. You can always change basic things about the kind of person you are.

Strongly Agree	Agree	Disagree	Strongly Disagree
----------------	-------	----------	-------------------



Growth Mindset
Survey

page 4



Slideshow Puzzle

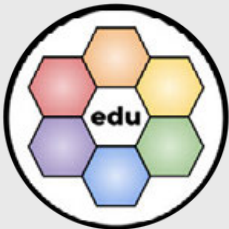
4		6	1		9	8	7	
9	1	7	4		8	3	5	6
2	8				7		1	
8			7				9	
1		4	5		3		6	
7	5			4		1		3
	7	1				5	8	
	9		6	7	5	2		
	4	2				6		

Rated 0.9 by Sudoku Snake, www.sudokusnake.com

Puzzle used
in slideshow

YOU CAN CHOOSE TO BE IN A GROWTH MINDSET !!!

Fixed Mindset	GROWTH MINDSET
Success is based on WHAT YOU WERE BORN WITH.	Success is based on HARD WORK, LEARNING, TRAINING and NOT GIVING UP!
You need to constantly prove that you're smart, strong, talented, etc.	Performance CAN be improved!
Failure means you're NOT smart, strong, talented	Learning comes from failure.
It's safer not to try than to show you're not smart.	You're here to learn and grow better.
Research shows you can CHANGE YOUR MINDSET just by changing THE WAY you talk to people!	
"Good job. You're very smart."	"Good job. You worked very hard."
"You learned that so quickly."	"I like the way you tried lots of strategies until you finally got it."
"You're like Einstein."	"I liked the effort you put in. Let's try to figure out what it is you don't get yet. "
"You're so brilliant, you didn't even try."	



Puzzle 1-1 (Very Easy)

	3				5	8		
	8			7		6	2	
4		9	6	8	2		3	1
6		4	2				1	3
1	9				7	2		4
				4		9		
7		3	8			4	9	2
8			4	6		3	7	
			7			1	8	6

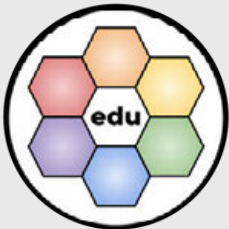
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Differentiated
Handout

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page 1



Puzzle Package

Puzzle 1-2 (Very Easy)

			8				9	6
8		2	1			5	3	7
9				2	5		8	
3		4		6				9
1	8		2		3	7		
7	2	6				3	5	8
4			5		9	6		
	1			8	6	9		3
6		7	3	1	2	8		

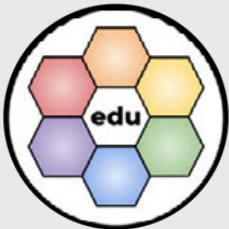
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page 2



Puzzle Package

Puzzle 1-3 (Very Easy)

2		9		8	3	4		
6		3			7		5	8
4					2		9	
		6	9	3		5	4	
3	4	5				9	8	2
8	9	7	2		4			1
		4				6	1	9
5			8		9	7		4
		1	7					5

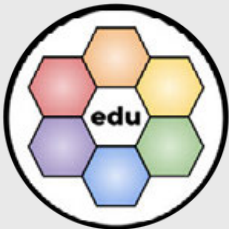
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page 3



Puzzle Package

Puzzle 2-1 (Easy)

	2			1		3		
	9	8	5		3		1	4
4	3					7		2
		7			9		4	5
5				7				6
							7	8
8		2		6		4		
		6	9		4			
3						8	6	1

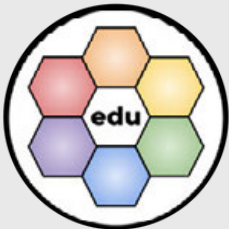
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page 4



Puzzle Package

Puzzle 2-2 (Easy)

9	1	7				5		8
		8		1	7	3		2
	3	4	5		9			
		1		4				
7			3		6			1
8			7				2	
5				2		9		
1		6			4	8		5
				5		6		

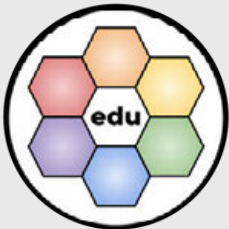
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Puzzle Package

Puzzle 2-3 (Easy)

1		3						5
					3		2	1
	9			8				
		4	8	7		6		9
	7			9	6			
9		8	5	3				
		2			8	5		
7	3		4		2		8	
	8	5					7	2

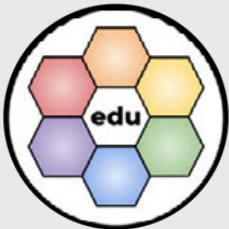
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"You're so brilliant, you didn't even try."	

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Puzzle Package

Puzzle 3-1 (Moderate)

	3	2		7		9		1
				9		8		3
						6		
		1			5	7	9	6
2	5	6				4		
3	7		6	8		2	1	5
1					3	5		9
6		3						
8				2		3		

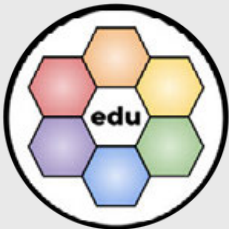
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Puzzle Package

Puzzle 3-2 (Moderate)

2		9	5		1			
	8	4			3		9	2
6	7	5				4		1
8	4		6	9				
9					2		8	
		7	4			6		9
4				1			2	
	1	2	9		4		6	5
			2		6	1		

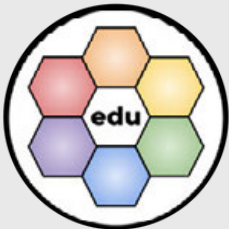
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Puzzle Package

Puzzle 3-3 (Moderate)

4				9	2	5	1	6
6	9					8		3
		1	3		6		4	9
					7	3	9	
		9						8
2				1	9			7
1					3	6		5
9	7	8		6	4	1		
	5							

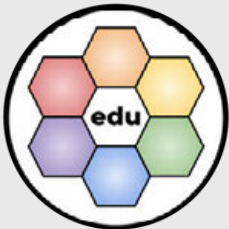
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Puzzle Package

Puzzle 4-1 (Hard)

					9	4	2	
	6	2			1			9
9			7					
	2	5	8		3		1	7
3	7	6				9		
			6	7	5	2		
2	9	7				5		8
5		4						
	3		9					

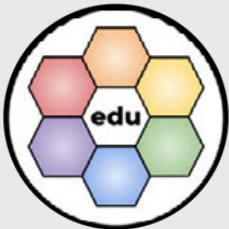
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Puzzle Package

Puzzle 4-2 (Hard)

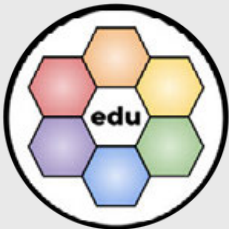
2					3			
9				4			5	
	6	5			2		1	
		4				2		9
6	9							
			4	2		1	6	5
8	7	9	6	3				
1	2				7		9	3
	5		2		1	7		

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Puzzle 4-3 (Hard)

	5		3	8				
		7	5	1				2
3			2					
	6	5						
			9			3		1
7							4	5
			6	4				
4					8	7		
8						5	2	

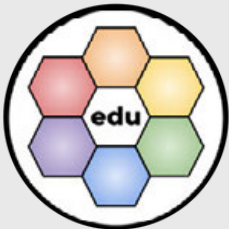
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Puzzle Package

Puzzle 5-1 (Very Hard)

		4	9			2		
	7		4		5	6	1	3
			6	1			9	
		7	8	9			6	
4								2
	6				3			9
7				5				1
		6					2	
	3	5		4		9		

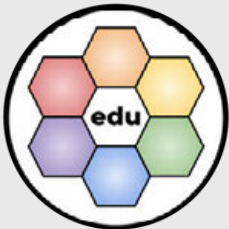
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Puzzle Package

Puzzle 5-2 (Very Hard)

		3				1		
4	5	2		1	7	6		8
7						2	5	
3			7				4	
	4		8			9	3	6
1					3	8		
	7	1						
9				8			6	
				9	5	7		

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Puzzle Package

Puzzle 5-3 (Very Hard)

								6
6			1	7				
	8	2	9		6		3	
1			2		9	3		7
	3		7				2	
					8	4		
		3	4	6	7			8
			3		2			5
	4			9				

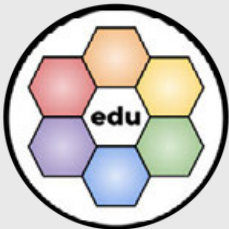
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Puzzle Package

Puzzle 6-1 (Expert)

						3	5	1
	6	7			9			
			8	4				5
	8		6			1	9	
4	5			9		8		3
9					2	4		
	7		3	5	4			2
	1			6				

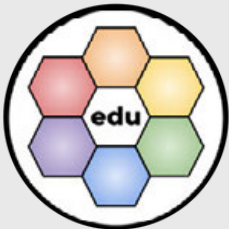
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Puzzle Package

Puzzle 6-2 (Expert)

		1	9	7				3
	9		4		5			
	4				6		8	
						7		
9			2		7			
2				3	1	5		4
		9			4		7	8
6				5				2
	8		7			1		

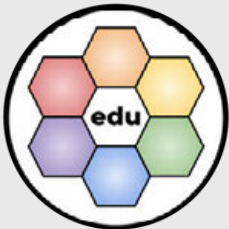
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Puzzle Package

Puzzle 6-3 (Expert)

	7		6			3		1
9				3	7			
6					8		7	
	4	9			6	5		
	8			7		2		
						1		4
8	5		9					2
	6	2				9	4	
		7	2				1	5

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Puzzle Package

Puzzle 7-1 (Fiendish)

8					5			3
	9			8			4	
		2	3			5		
		7				1		
				9			6	
	1				6			2
					2	8		
	7		1					
9				7				5

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Puzzle 8-1 (Diabolical)

		5			6		9	
			5				7	
7				4		5		
	8		3			9		
		7			1		4	
3		6		2				8
2					8			
								4
		3	9			5		

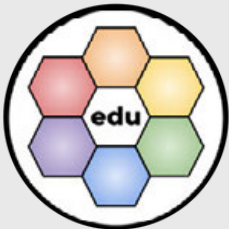
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Puzzle Package

Puzzle 9-1 (Serpentine)

			2				4	8
5				9			2	
		6			4	9		
		1			6			2
		3		2	1		8	
			8			6		
6								9
	5			4			3	
					3	5		

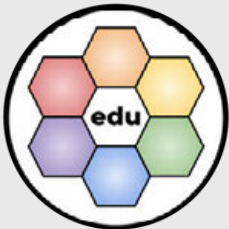
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Puzzle Package



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Chapter 4 of Exploring the 6 Cs (21st Century Learning)

COMMUNICATION C

SOCIAL-EMOTIONAL LEARNING (SEL)

SECTION C. Assertive Communication

version: v2022-07-24

ANSWERS - WHAT DO YOU BELIEVE

NOTE: These answers are adapted from Dweck, 2006. *Mindset: The new psychology of success*. Pg. 12 - 13 - The answers in GREEN indicate a response someone in a Growth Mindset might give. The answers in RED are for a Fixed Mindset. Answers are also provided in the slideshow.

Please note: Like all answer keys, this document contains bias. Teaching resources and discussion guides normalize power inequities, single stories, and social norms. I create content. I'm part of a system that needs a little help to amplify stories and perspectives that we don't often hear. **I have unconscious bias. I don't know what I don't know.** If you think an answer is missing, incorrect, or incomplete, please email Mike@educircles.org so I can update this document to include other perspectives, lived experiences, and teaching experiences. (If you like this note, you'll love [Who is Invisible](#).)

Part 1. Questions about Intelligence

1. Your **intelligence** is something very basic about you that you can't change very much.

2. You can learn new things, but you can't really change how **intelligent** you are.

3. No matter how much **intelligence** you have, you can always change it quite a bit.

4. You can always substantially change how **intelligent** you are.

6Cs Character A - Answers - What do you believe survey

Educircles / SEOT Mindset v2022-07-27

What do
you believe
survey

page 1



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Answers

Part 2. Questions about **Sports Ability**

5. Your **sports ability** is something very basic about you that you can't change very much.

6. You can learn new things, but you can't really change how **good you are at sports**.

7. No matter how much **sports ability** you have, you can always change it quite a bit.

8. You can always substantially change how **good you are at sports**.

Part 3. Questions about **Artistic Talent**

9. Your **artistic talent** is something very basic about you that you can't change very much.

10. You can learn new things, but you can't really change how **good you are at art**.

11. No matter how much **artistic talent** you have, you can always change it quite a bit.

12. You can always substantially change how **good you are at art**.

What do
you believe
survey

page 2



Answers

Part 4. Questions about **Personality** and **Character**

13. You are a **certain kind of person**, and there is not much that can be done to really change that.

14. No matter **what kind of person you are**, you can always **change** substantially.

15. You can do things differently, but the **important parts of who you are** can't really be changed.

16. You **can always change basic things about the kind of person you are**.

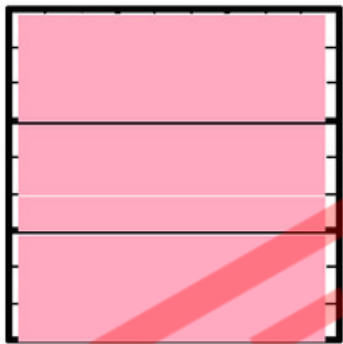
What do
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page 3



Answers

SOLUTION: Slideshow Puzzle



Puzzle used
in slideshow

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It's safer not to try than to show you're not smart.	You're here to learn and grow better.
Research shows you can CHANGE YOUR MINDSET just by changing THE WAY you talk to people!	
"Good job. You're very smart."	"Good job. You worked very hard."
"You learned that so quickly."	"I like the way you tried lots of strategies until you finally got it."
"You're like Einstein."	"I liked the effort you put in. Let's try to figure out what it is you don't get yet."
"You're so brilliant, you didn't even try."	

6Cs Character A - Answers - Slideshow Puzzle
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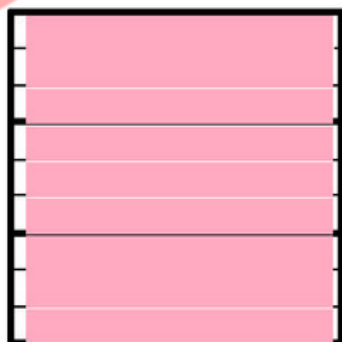
Answers

SOLUTION: Puzzle 1-1
(Very Easy)



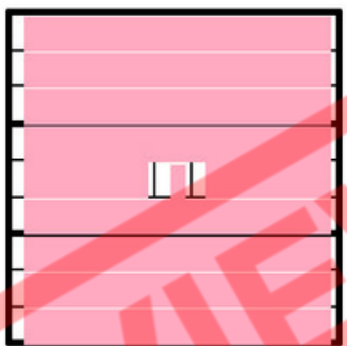
Puzzle
Package

SOLUTION: Puzzle 1-2
(Very Easy)



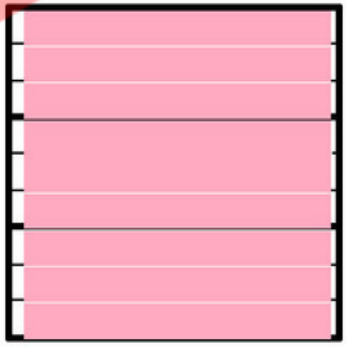
Answers

SOLUTION: Puzzle 1-3
(Very Easy)



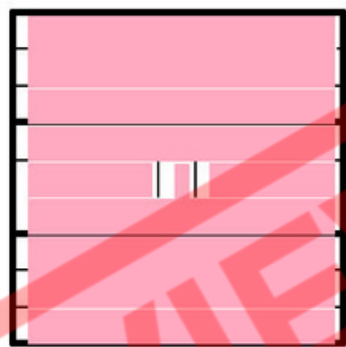
Puzzle
Package

SOLUTION: Puzzle 2-1
(Easy)



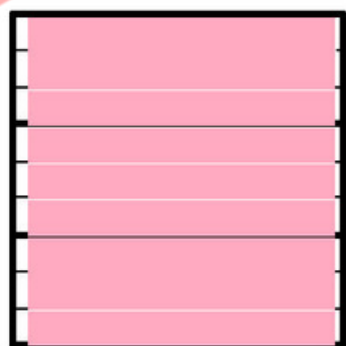
Answers

SOLUTION: Puzzle 2-2
(Easy)



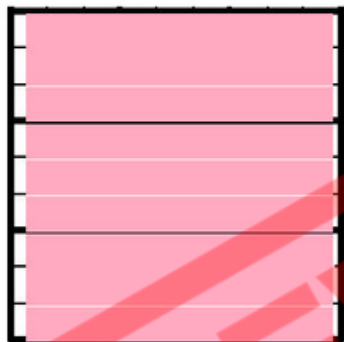
Puzzle
Package

SOLUTION: Puzzle 2-3
(Easy)



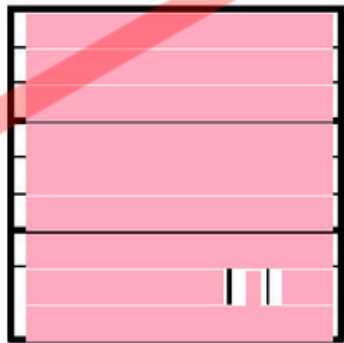
Answers

SOLUTION: Puzzle 3-1 (Moderate)



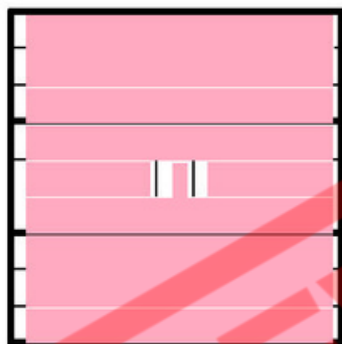
Puzzle
Package

SOLUTION: Puzzle 3-2 (Moderate)



Answers

SOLUTION: Puzzle 3-3 (Moderate)



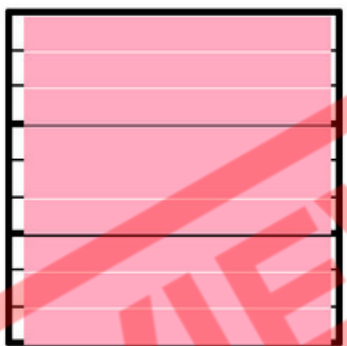
Puzzle
Package

**SOLUTION: Puzzle 4-1
(Hard)**



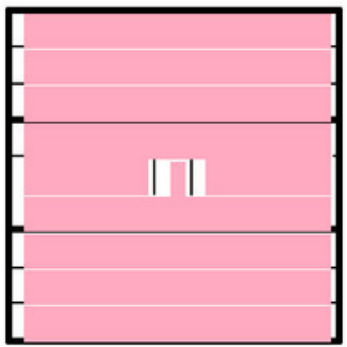
Answers

SOLUTION: Puzzle 4-2
(Hard)



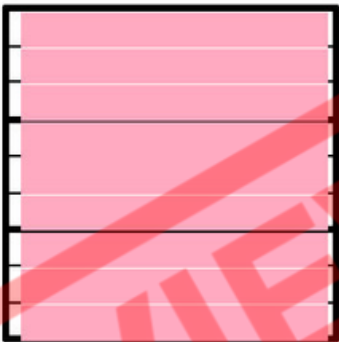
Puzzle
Package

SOLUTION: Puzzle 4-3
(Hard)

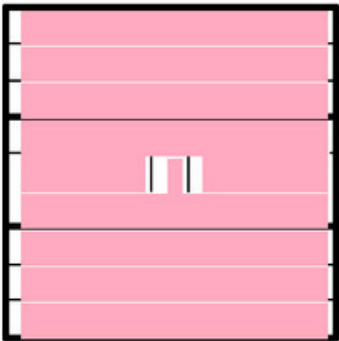


Answers

SOLUTION: Puzzle 5-1
(Very Hard)



SOLUTION: Puzzle 5-2
(Very Hard)

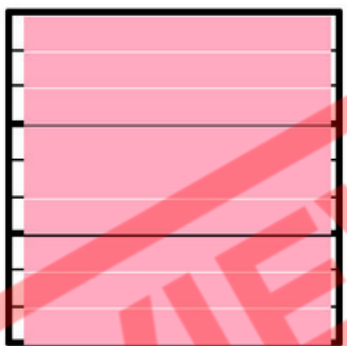


Puzzle
Package



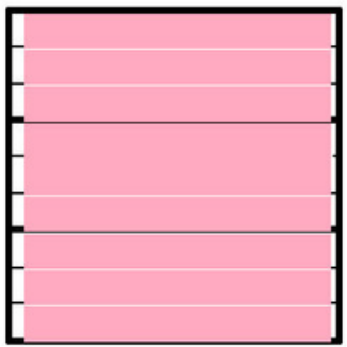
Answers

SOLUTION: Puzzle 5-3
(Very Hard)



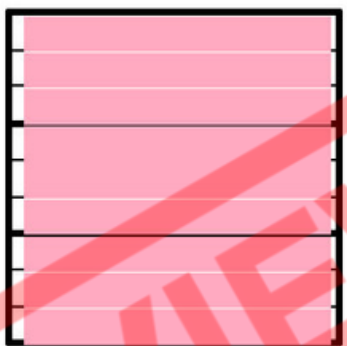
Puzzle
Package

SOLUTION: Puzzle 6-1
(Expert)



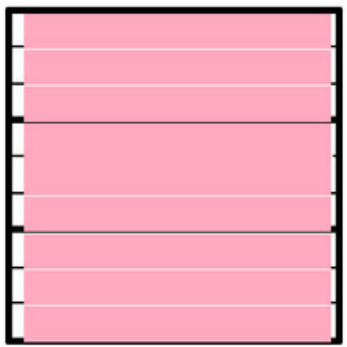
Answers

SOLUTION: Puzzle 6-2
(Expert)



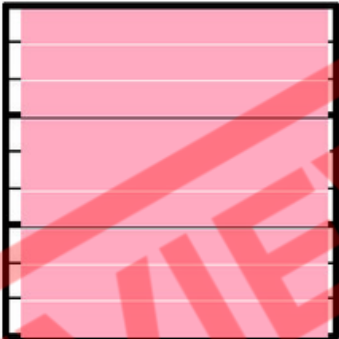
Puzzle
Package

SOLUTION: Puzzle 6-3
(Expert)



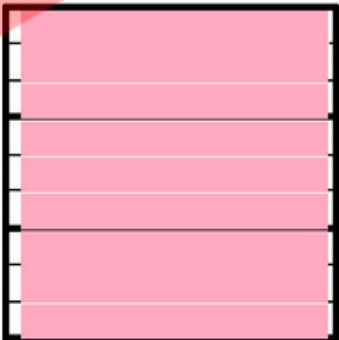
Answers

**SOLUTION: Puzzle 7-1
(Fiendish)**

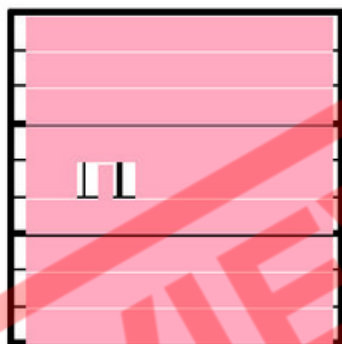


Puzzle
Package

SOLUTION: Puzzle 8-1 (Diabolical)



SOLUTION: Puzzle 9-1
(Serpentine)



Puzzle
Package



Answers



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Chapter 1 of Exploring the 6 Cs (21st Century Learning)

CHARACTER CHAPTER

SOCIAL-EMOTIONAL LEARNING (SEL)

SECTION A. Growth Mindset Survey + Puzzles

SECTION B. Video Analysis

SECTION C. Consolidation and Review

version: v2022-07-27

LESSON PLANS

PART 1. Experience

SECTION A Mindset

1. [CHARACTER - LESSON A1: 45 min](#)
2. [CHARACTER - LESSON A2: 45 min](#)
3. [CHARACTER - LESSON A3: 45 min](#)
4. [CHARACTER - LESSON A4: 40 min](#)



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SECTION A Mindset

Slide Number Comparison Chart

Are you teaching in class?

- Use **Slideshow - ALL** (from the bundle) or **Slideshow - Section A** (from the product) and project to the class.

Are you creating assignments in Google Classroom, Microsoft Teams, or another LMS?

- Attach **Slideshow - Lesson A1, A2, A3, and A4** to your assignments.

Lesson A1	Slideshow		
	ALL	Section A	Lesson A1
CHARACTER - LESSON A1: 45 minMindset Self Assessment - SLIDES 1-39			
Introduction of Character / Survey (slides 1-5) - 5 min	1-5	1-5	1-5
PART 1: Experience - Activity #1 Doing the "What do you believe" survey - 20 min			
Survey - Intelligence (slides 3-10)	3-10	3-10	3-10
Survey - Sports Ability (slides 11-15)	11-15	11-15	11-15
Survey - Artistic Talent (slides 16-20)	16-20	16-20	16-20
Survey - Personality and Character (slides 21-25)	21-25	21-25	21-25
Taking up the answers - Discussing growth mindset (slides 26-39) - 20 min	26-39	26-39	26-39

Use this to
teach in class

Slideshow
from bundle

Slideshow
from product

Individual lesson
slideshow

Assign this in
Google
Classroom



Use this to
teach in class

Slideshow
from bundle

Slideshow
from product

Individual lesson
slideshow

Assign this in
Google
Classroom

Lesson A2	Slideshow		
	ALL	Section A	Lesson A2
CHARACTER - LESSON A2: 40 min Sudoku Round 1 and 2 (slides 40-90)	40-90	40-90	1-51
Sudoku Round 1			
Reviewing Mindset (slide 40-49) - 5 min	40-49	40-49	1-10
What is Sudoku - 10 min			
Introduction and vocabulary (Slides 50-63)	50-63	50-63	11-24
Rules (slides 64-69)	64-69	64-69	25-30
Sudoku and Growth Mindset (slides 70-72)	70-72	70-72	31-33
Work period (slide 73) - 5-10 min	73	73	34
Sudoku Round 2			
Sudoku Strategies #1-3 - 10 min			
Sudoku Strategy 1. Inspection (slides 74-77)	74-77	74-77	35-39
Sudoku Strategy 2. Start with the Most (slide 78-86)	78-86	78-86	40-47
Sudoku Strategy 3. Write down Candidates (slide 87-89)	87-89	87-89	48-50
Sudoku Round 2 work period (slide 90) - 10 min	90	90	51
Lesson A3	Slideshow		
	ALL	Section A	Lesson A3
CHARACTER - LESSON A3: 45 minSudoku Round 3 & 4 (slides 91-124)	91-124	91-124	1-34
Sudoku Round 3 - Sudoku Strategies #4-5 - 10 min			
Sudoku Strategy 4. Go by number (slides 91-96)	91-96	91-96	1-6
Sudoku Strategy 5. Pointing (slides 97-102)	97-102	97-102	7-12
Sudoku Round 3. Work period (slide 103) - 10 min	103	103	13
Sudoku Round 4 - Sudoku Strategies #6-9 - 15 min			
Sudoku Strategy 6. Go by row (slides 104-108)	104-108	104-108	14-18
Sudoku Strategy 7. Double Check (slides 109-111)	109-111	109-111	19-21
Sudoku Strategy 8. Go by box (slides 112-117)	112-117	112-117	22-27
Sudoku Strategy 9. Hidden Singles (slides 118-123)	118-123	118-123	28-33
Sudoku Round 4. Work period (slides 124) - 10 min	124	124	34



Lesson A4	Slideshow		
	ALL	Section A	Lesson A4
CHARACTER - LESSON A4: 40 min Sudoku Round 5	125-138	125-138	1-14
Sudoku Round 5 - 20 minutes			
Bringing it back to building character (slides 125-126)	125-126	125-126	1-2
Overcoming Obstacles / Perseverance Strategies (slides 127-132) - 10 min	127-132	127-132	3-8
Sudoku Round 5. Work period - (slide 133) - 10 min	133	133	9

Use this to
teach in class

Slideshow
from bundle

Slideshow
from product

Individual lesson
slideshow

Assign this in
Google
Classroom



CHARACTER - LESSON A1: 45 min
Mindset Self Assessment (slides 1-39)

OVERVIEW

- Introduction of Character / Survey (slides 1-5) - 5 min
- PART 1. Experience - Activity #1
Doing the "What do you believe" survey (20 min)
 - Survey - Intelligence (slides 3-10)
 - Survey - Sports Ability (slides 11-15)
 - Survey - Artistic Talent (slides 16-20)
 - Survey - Personality and Character (slides 21-25)
- Taking up answers / Discussing mindset (slides 26-39) - 20 min



MATERIALS

- Slideshow (Slideshow ALL, Slideshow - Section A, or Slideshow - Lesson A1)
- Class set of Growth Mindset survey (Handout - What do you believe survey)
- (optional) Teacher copy of answers (Answers - What do you believe survey)
 - Answers are also taken up in the slideshow itself.
- Class set of Review - Lesson A1

Introduction of Character / Survey (slides 1-5) - 5 min



	<p>We're going to start looking at Character for the next week..</p> <ul style="list-style-type: none">• I'm not going to give you a full definition of Character yet. We're going to do that at the end.• I will tell you that the Character we're talking about is like when we say "character building" experiences, as opposed to a character from a novel or movie.. <p>We're going to do 3 things.</p> <ul style="list-style-type: none">• We're going to do some activities that let us experience Character.• We're going to watch some short videos of some people talking about character building experiences in their lives• And, we're going to get a good understanding of what character is by using a graphic organizer to play with the word.
	<p>Our first activity is a little questionnaire to figure out what do we believe.</p> <p>TEACHER TIP: It might be fun for you to do this handout first to see what you believe... before you look at the answers on slide 26. Carol Dweck's book on Mindset: The New Psychology of Success is a fascinating read. Chapter 7 is for parents, teachers, and coaches, and Chapter 8 is about changing mindsets.</p>

Timing


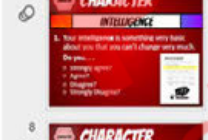
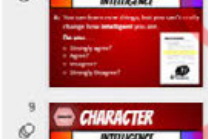
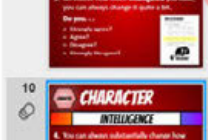
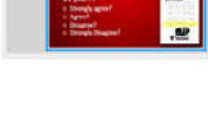
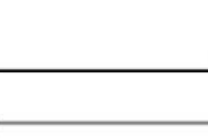
Materials

Lesson
A1



	<p>Get the handout. Together as a class, we're going to go through these questions. I'm going to read each statement and your job is to figure out if you really strongly agree with it, kind of agree with it, kind of disagree, or really disagree with it. And then, you circle your answer for that question.</p> <p>There's four parts to this, and some of the questions may seem similar, but they're kind of different in little ways, so pay attention.</p>
	<p>TEACHER TIP:</p> <ul style="list-style-type: none"> Some students are afraid to make mistakes. It's important to note that our mindsets can change, and even if we're normally in a growth mindset, we can slip and find ourselves in a fixed mindset. You might want to have students write their name and date at the top - it's a snapshot of today and it might be interesting to see what happens later if you do this survey again.

PART 1. Experience - Activity #1 Doing the "What do you believe" survey (20 min) Survey - Intelligence (slides 3-10)

	<p>We're going to do the first page which has questions about intelligence and has a picture like this one with the thinking bubble.</p> <p>TEACHER TIP: The questions in this section are exploring the idea, "Some kids are smart and some are dumb. They have a worse brain."</p>
	<p>I find when I do this activity with students, sometimes I have to give examples of different scenarios so students can figure out which answer to circle.</p>
	<p>For example: Your intelligence is something very basic about you that you can't change very much.</p> <ul style="list-style-type: none"> If you think how smart you are is a core fact about you and it definitely can't change, then circle "strongly agree"
	<ul style="list-style-type: none"> If you kind've think that, "yeah, I guess how smart you are is very basic and you really can't change it," then circle "agree"
	<ul style="list-style-type: none"> If you think, "no, you can change your intelligence and how smart you are," then circle "disagree"
	<ul style="list-style-type: none"> If you think, "This is absolutely wrong. How smart you are isn't a basic part of you. It can change a lot," then circle "strongly agree" <p>TEACHER TIP: As we go through the question, there's a screenshot of the handout to help visual learners. You can also draw attention to the yellow highlight to show which question we are on.</p>

Growth Mindset
student survey

Asking about
intelligence



Survey - Sports Ability (slides 11-15)

11

CHARACTER

PAGE 2

CHARACTER

SPORTS ABILITY

Now we're going to do part 2. Turn the page.

12

CHARACTER

SPORTS ABILITY

Sports ability - ability to do sports, or be athletic.

13

CHARACTER

SPORTS ABILITY

TEACHER TIP: Some people have a growth mindset towards how smart they are... but a fixed mindset towards sports... or arts.

14

CHARACTER

SPORTS ABILITY

How many times have you heard statements like

15

CHARACTER

SPORTS ABILITY

- Some people are born athletes.
- Some people are more athletic than others, and that's just the way it is.
- I'm not athletic. No one in my family is athletic.
- She's a natural athlete. That's why she's good at sports.
- He's a natural athlete. That's why he made the team.

Asking about sports ability

Survey - Artistic Talent (slides 16-20)

16

CHARACTER

PAGE 3

CHARACTER

ARTISTIC TALENT

Artistic talent can include things like music, art, drama, poetry, etc

17

CHARACTER

ARTISTIC TALENT

Some people can accept ideas about mindset when it comes to intelligence, or sports, but then they think artistic talent comes naturally (i.e. fixed mindset about art).

18

CHARACTER

ARTISTIC TALENT

- Some people are born naturally good at art.
- I'm not an artist. That's why I'm not good at drawing and stuff.

19

CHARACTER

ARTISTIC TALENT

20

CHARACTER

ARTISTIC TALENT

Asking about artistic talent



Survey - Personality and Character (slides 21-25)

21

CHARACTER

PART 4

PERSONALITY & CHARACTER

22

CHARACTER

PERSONALITY

23

CHARACTER

PERSONALITY

24

CHARACTER

PERSONALITY

25

CHARACTER

PERSONALITY

The questions in Part 4. Personality and Character are interesting because some of us might have a growth mindset about our intelligence, sports ability, artistic talent, etc... but when it comes to aspects about our personality, that's just who we are:

- I'm dependable,
- I'm co-operative
- I'm caring,
- I'm social,
- I'm generous.
- I'm selfish, etc.

Taking up the answers - Discussing growth mindset (slides 26-39) - 20 min

26

CHARACTER

LET'S TAKE IT UP!

Let's take it up.

TEACHER TIP: The following slides ask students to figure out if they have a "fixed" mindset or a "growth" mindset.

If students ask for a definition, explain that it's coming up in a bit.

- Answers that go with Fixed Mindsets are highlighted in red
- Answers that go with Growth Mindsets are in green.

Ask students to write down on their page what kind of mindset they have for that part. (This way, they might remember their answers for the discussion later on.)

Some teachers / students will be okay with eyeballing the page and say things like

- "Overall for Intelligence, I'm definitely in a fixed mindset," or
- "Overall for Sports Ability, I'm kind of in a growth mindset"

Other teachers / students might take a more quantitative approach.

- Growth Mindset (Strong green answer) +2
- Growth Mindset (green answer) +1
- Fixed mindset (red answer) -1
- Fixed mindset (strong red answer) -2

Asking about personality

Taking up the survey

27

CHARACTER

LET'S TAKE IT UP!

There are 2 kinds of mindsets:

FIXED MINDSET

GROWTH MINDSET

So, on a page of 4 questions, students can plot their mindset on a thermometer scale or integer scale

- +8 would be very growth mindset
- 8 would be very fixed mindset

28

CHARACTER

LET'S TAKE IT UP!

What kind of mindset do you have about INTELLIGENCE?

FIXED MINDSET

GROWTH MINDSET

Either way, the goal of this activity is for students to reflect on the type of mindset. **NOTE:** Mindset might be the same or different for the different parts: intelligence, sports ability, artistic talent, personality.

29

CHARACTER

LET'S TAKE IT UP!

What kind of mindset do you have about PERSONALITY?

FIXED MINDSET

GROWTH MINDSET

30

CHARACTER

LET'S TAKE IT UP!

What kind of mindset do you have about SPORTS ABILITY?

FIXED MINDSET

GROWTH MINDSET

31

CHARACTER

LET'S TAKE IT UP!

What kind of mindset do you have about ARTISTIC TALENT?

FIXED MINDSET

GROWTH MINDSET

32

CHARACTER

MINDSET

- Based on decades of research on achievement and success
- Carol Dweck's research on growth mindset
- Carol Dweck, Ph.D.
- This research on growth mindset is more important than ability.

Teacher Tip: Carol Dweck's book is a fantastic read.

NOTE: We are not associated, affiliated or connected with her book. We simply read her book, and tried to teach the concepts to our students. Where possible, we used her direct words or paraphrased her words in the following slides.

The questions in the handout are adapted from questions in her book. We did our best, but we may have made mistakes or misunderstood her research on Mindset. We did spend a lot of time and effort in trying to understand what she was saying, but mistakes happen. We highly recommend reading her book. Or, watching her [TED talk](#).

There are two big take aways for students to walk away with.

- The ideas about growth mindset and fixed mindset are based on research.
- The power of our mindset is **MORE IMPORTANT** than ability.
*And this is a key concept that we're trying to get students to experience, see in the celebrities, and understand with the vocabulary building at the end.

33

CHARACTER

MINDSET

FIXED MINDSET

GROWTH MINDSET

34

CHARACTER

MINDSET

FIXED MINDSET

GROWTH MINDSET

35

CHARACTER





MINDSET

FIXED MINDSET

GROWTH MINDSET

Key take-away message



<div><div>36</div><div></div></div>	<p>More examples of different things to say are coming later on in the slideshow (slide 72)</p>
<div><div>37</div><div></div></div>	<p>We used a traffic light analogy:</p> <ul style="list-style-type: none">• Red light: A fixed mindset stops us from moving forward.• Green light: A growth mindset helps us go forward. (Note it doesn't guarantee you win the race or climb the mountain, but it does mean you're moving!)
<div><div>38</div><div></div></div>	<p>Ask students to look at their different mindsets and discuss.</p>
<div><div>39</div><div></div></div>	<p>Possible Teacher Prompts:</p> <ul style="list-style-type: none">• What surprised you the most about the information so far about "fixed mindsets" and "growth mindsets"? Why?• What surprised you the most about your results? Why?• If it turned out that part of Carol Dweck's research was wrong, which part do you think it would be? Why?<ul style="list-style-type: none">◦ This is an interesting question because it might identify some fixed mindsets that we have.
<p>OPTIONAL:</p>	<p>Students can do the review handout (Review - Lesson A1)</p>

Discussion Prompts



Lesson A2

CHARACTER - LESSON A2: 45 min Sudoku Round 1 and 2 (slides 40-90)

OVERVIEW

Reviewing Mindset (slide 40-49) - 5 min

Sudoku Round 1 - 20 min

- What is Sudoku - 10 min
 - Introduction and vocabulary (Slides 50-63)
 - Rules (slides 64-69)
 - Sudoku and Growth Mindset (slides 70-72)

- Work period (slide 73) - 10 min

Sudoku Round 2 - 20 min

- Sudoku Strategies #1-3 - 10 min
 - Sudoku Strategy 1. Inspection (slides 74-77)
 - Sudoku Strategy 2. Start with the Most (slide 78-86)
 - Sudoku Strategy 3. Write down Candidates (slide 87-89)
- Sudoku Round 2 work period (slide 90) - 10 min

Sudoku Resources provided in this Character package:

- 21 puzzles with 9 different difficulty levels:

<ul style="list-style-type: none"> ◦ Very Easy (3 puzzles) ◦ Easy (3 puzzles) ◦ Moderate (3 puzzles) ◦ Hard (3 puzzles) ◦ Very Hard (3 puzzles) 	<ul style="list-style-type: none"> ◦ Expert (3 puzzles) ◦ Fiendish (1 puzzle) ◦ Diabolical (1 puzzle) ◦ Serpentine (1 puzzle)
--	---
- 21 puzzle SOLUTIONS
- Sudoku puzzle example (and SOLUTION) used in the slideshow

MATERIALS

- Slideshow (**Slideshow ALL**, **Slideshow - Section A**, or **Slideshow - Lesson A2**)
- Whole class example (the puzzle in the slideshow)
 - Class set of **Handout - Slideshow Puzzle**
 - **Answers - Slideshow Puzzle**
- Independent work package
 - Prepare student packages of **Handout - Puzzle Package**
 - Option 1: Photocopy puzzles to keep in containers. Students get as they need
 - Option 2: Each student gets a stapled booklet of all 21 puzzles.
 - **Answers - Puzzle Package**
- Class set of **Review - Lesson A2**

6Cs Character - Lesson Plans - Page 11 of 57

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PART 1. Experience - Activity #2 Sudoku

Activity #2 uses Sudoku as an opportunity to try strategy-based learning and to conscientiously think about being in a growth mindset. In other words, it's time to practice what we learned about growth mindsets from the first activity!

TEACHER TALK: We chose Sudoku to be part of this Character package because...

- You use strategies to become better at solving puzzles
- **Sudoku allows for easy differentiation in your class.** There is a wide range of Sudoku puzzles ranging from super easy to ridiculously hard. This allows a wide spectrum of students to get into the zone. Find a puzzle that's not too easy, and not too hard. (Zone of Proximal Development.)
- **Answers are provided**, so it's easy for students to self-check and then move onto another puzzle of the same difficulty, or try a harder level.
- **This is an opportunity to struggle and develop character.** Eventually, everyone hits a wall where it becomes hard to solve a puzzle. This is an opportunity to struggle and try perseverance strategies until we finally break through and solve the puzzle, and by doing so, master new strategies and develop character.
- **It's easy (and tempting) to cheat - this provides opportunity to talk about fixed mindsets.** There are lots of free programs that let you type in the numbers of a puzzle and have the computer automatically generate the answer. This is fantastic because copying down the answers and moving onto the next puzzle isn't the point. It doesn't help you develop resilience or logical thinking. You won't be better at solving sudoku puzzles just because you can copy answers onto your page.

Sudoku provides an analogy for learning.

- Sometimes, we are assigned questions for homework and we simply copy answers from the back of the textbook, or we copy answers from a friend, or we google the answer.
- If you copy down the answer for a sudoku puzzle from the answer page, are you any better at solving a Sudoku puzzle independently, next time?
- When puzzles get frustrating, do you have coping strategies to get through tough times?
- Sometimes work seems meaningless, but you still have to do it. Can you find strategies to help you find the joy or a positive attitude in doing it?

Sudoku provides an opportunity for practicing a GROWTH MINDSET.

- A growth mindset comes when we realize that strategies and effort can help us improve.
- During the work periods, we will have a few phrases posted on the slide to help put people into a growth mindset
- As you walk around providing just in time support to struggling students, you can provide different levels of hints (scaffolded support):
 - Find a number that they haven't unlocked yet on their puzzle.
 - **Stage 1 support:** Give the student the name of a strategy that will unlock that answer

Sudoku and Growth Mindset



- **Stage 2 support:** Tell them which box (or row or column) to look at
- **Stage 3 support:** Work through the strategy with them step-by-step.
- Notice at no point, do we simply give them the answer to a cell. Instead, we provided them with help applying strategies.
- **TEACHER TIP:** Students who are really good at Sudoku could help others by providing them with Stage 1, 2, or 3 clues. And then this provides these students with practice explaining strategies, and reflecting on how strategies help us. (It's all about making the hidden thinking, more visible!)

The point of this activity is not to become Sudoku experts.

- The point is to develop strategies to persevere and keep at a task when the going gets tough. (Build character through tough times.)
- Logical thinking is always a nice thing.
- Developing communication and collaboration skills to problem solve a puzzle together is also a good skillset to have.

IDEA: Do Sudoku as a daily 5 minute bell work activity at the start of class. Here's how it could work:

- **Week 1:** Do the character lessons in this package
 - LESSON 1 - Activity #1 What do you believe Self Assessment Handout / Growth Mindset vs Fixed Mindset
 - LESSON 2 - Activity #2 Sudoku - Round 1 and Round 2
 - LESSON 3 - Sudoku continued - Round 3 and Round 4
 - LESSON 4 - Sudoku continued - Round 5 / Video 1
 - LESSON 5 - Videos continued
 - LESSON 6 - Playing with words handout
 - LESSON 7 - Self Evaluation / Review
- **Week 2 and on:** Bell work
 - Bell work: students work on Sudoku while you do attendance, collect paperwork.
 - Accountability piece - different focus question per day:
 - Discuss with a partner a Sudoku strategy that worked (or didn't work) for you. Explain the strategy, and then explain how you used it and why it worked (or didn't work.).
 - Discuss with a partner a perseverance (overcoming obstacles) strategy that worked (or didn't work) for you. Explain the strategy, and then explain how you used it and why it worked (or didn't work.).
 - Discuss with a partner a statement you said to try to encourage a growth mindset. Explain the statement, and then explain how you used it and why it worked (or didn't work.).
 - On the last day of the week, students could write a paragraph response

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The point of
the puzzles



for assessment purposes (learning skills, paragraph writing, etc.)

Where do your Sudoku resources come from? Are you Sudoku experts?

Nope! We're not sudoku experts by any means. But, as teachers, we love finding resources and figuring out ways to deliver the content to our students!

There are a lot of great resources on the internet. We discovered we really, really, really liked Sudoku Snake (www.sudokusnake.com) - All of the Sudoku puzzles and screenshot were generated by Sudoku Snake.

1. They have a great resource page with beginner strategies that we've adapted in this slideshow. But they also have many more difficult and complex strategies posted here: <http://www.sudokusnake.com/techniques.php>

TEACHER TIP: If you have students who are incredibly good at Sudoku (or even if they're not good at Sudoku), why not send them to the Sudoku Snake resource page and have them learn a new strategy. Even, better, get them to present it to the class!

2. They have a free downloadable program. You can download the full version for free from their home page. We used it to create our Sudoku puzzle handouts that are included in this package, but you could use it, or another Sudoku generator to generate more.

TEACHER TIP: If you teach with a projector, you could download the program onto your teacher computer and solve problems as a class using the program. (The Sudoku snake program has both a generate / design mode, as well as a solve mode. This way, when students suggest candidates and possibilities for the different cells, rather than writing in small chalk numbers, the program lets you type in little red numbers in the cell.

TECHNICAL TIP: We use Windows 10 on our laptop and had some difficulty installing Sudoku Snake which was designed for an older version of Windows. If you right-click the installer file, you get the option called "PROGRAM COMPATIBILITY TROUBLESHOOTER" - This let us install the program as a "Windows Vista (Service Pack 2)" program and it works fine for us now.

3. We really liked the explanation of how they ranked puzzle difficulty. We used their rating system (from Very Easy to Serpentine) here in this Character package. You can read about the challenges of rating Sudoku puzzle difficulty here: <http://www.sudokusnake.com/ratingsystem.php>

About the Sudoku puzzles




Reviewing Mindset (slide 40-49) - 5 min

Round 1

introduction

What is Sudoku - 10 min
Introduction and vocabulary (Slides 50-63)



60

Interesting facts about Sudoku from <http://www.sudokusnake.com/history.php>

TEACHER TIP: Literacy teachers could use this as a reading passage in the class.

Sudoku Background information: (Source: <http://www.sudokusnake.com/about.php>)

- A proper, valid Sudoku puzzle has only one possible solution that can be solved with logic, and without guessing.
- Sudoku puzzles are generated by computers
- Sudoku puzzles are ranked by difficulty in different ways according to different philosophies..
 - There is no universally accepted rating system. That's why a sudoku puzzle might have an easy ranking in one system, but a hard ranking according to a different system.
 - Sudoku Snake (which is what we used to generate our puzzles) ranks puzzles based on the human strategies required to solve it: <http://www.sudokusnake.com/ratingsystem.php>
 - We like Sudoku Snake because the strategies used to rank a puzzle are provided here: <http://www.sudokusnake.com/techniques.php> (We will talk about some of the Beginner Sudoku strategies in this slideshow.)

Cool Sudoku Facts: (Source: <http://www.sudokusnake.com/history.php>)

- In the late 1970s, Howard Garnes came up with the puzzles we now call Sudokus. (He called them Number Place.)
- 'Sudoku' is a Japanese word that means 'Numbers Single,' or 'Solitaire with Numbers,' or 'The Numbers Occur only Once.'
- In the mid 1980s, Nikoli puzzle company made SuDoku puzzles popular in Japan
- In 1997, Wayne Gould wrote a computer program to generate Sudoku puzzles and published these puzzles in newspapers in England, and then across the world.
- In 2006, programmers and sudoku masters on the internet tried to generate the world's hardest Sudoku.
- On Nov 6, 2006, Arto Inkala (Finnish mathematician) created a puzzle named "Al Etana" which was accepted by almost all rating systems as the world's hardest Sudoku puzzle.
 - The puzzle "Al Etana" can be found here: <http://www.sudokusnake.com/aletana.php>
 - Even more difficult puzzles have been generated since "Al Etana"!

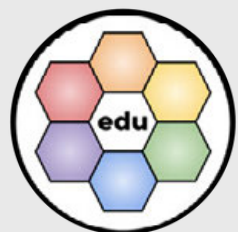
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What is
Sudoku?



Sudoku
is NOT math

51

CHARACTER

WHAT IS SUDOKU?

SUDOKU IS NOT MATH

• It looks like math because there are numbers, but there's no arithmetic (addition, subtraction, etc)

• (It's similar to math because we use logical thinking to solve sudoku puzzles, and we use logic in math as well.)

52

CHARACTER

WHAT IS SUDOKU?

SUDOKU IS NOT MATH

• You just need 9 symbols.

- Normally Sudoku puzzles use the numbers from 1-9, but you could also use 9 letters.
 - The letters could be the first 9 letters of the English alphabet (A,B,C,D,E,F,G,H,I)
 - Or, they could be random letters
 - Or, they could be 9 unique letters from a name (HOGWARTS!)
 - Do you find it harder or easier...

53

CHARACTER

WHAT IS SUDOKU?

SUDOKU IS NOT MATH

• Emojis - Teacher Prompt:

- What are the 9 different emojis used?
- Do you find this sudoku easier or harder than when we use numbers?

Possible Answers:

- Students might like this better because they like Emojis
- They might find this harder because with numbers, we already know the 9 numbers that are used. In this one, we have to think about which symbols are missing.

54

CHARACTER

SUDOKU

VOCABULARY

(It's not the same words to describe stuff)

A review of some of the "math" words used in our Sudoku slides. Explicit instruction of vocabulary will help everyone start from the same point.

- Some systems have different terms
- Some students will not be sure what a row or column or cell is.

Six Cs CONNECTION: Communication and collaboration.

- How does using a common vocabulary make things easier?
- How else could you communicate which part of the puzzle you were talking about? (non-verbal - pointing, written communication - writing down candidates and answers)
- How could you collaborate with someone to try to solve a puzzle?

Teacher Tip:

- We used letters for column names and numbers for row names because this is how we refer to cells in spreadsheet programs like Excel or Google Spreadsheet.
- This means the top left cell is called "A1" which might be confusing for some people because cell A1 could also have the number 1.
- In the beginning, if we say the word "cell" before the cell name, it might make things more clear. For example, "In Cell A2, there is a number 4"



55

CHARACTER VOCABULARY

Cell

Row

Column

Row Number

Column Number

Cell Number

Row Number

56

CHARACTER VOCABULARY

Cell

Row

Column

Row Number

Column Number

Cell Number

Row Number

57

CHARACTER VOCABULARY

Cell

Row

Column

Row Number

Column Number

Cell Number

Row Number

58

CHARACTER VOCABULARY

Cell

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Column

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Column Number

Cell Number

Row Number

62

CHARACTER VOCABULARY

Cell

Row

Column

Row Number

Column Number

Cell Number

Row Number

63

CHARACTER VOCABULARY

Cell

Row

Column

Row Number

Column Number

Cell Number

Row Number

TEACHER TIP: It might be more clear to say "row" or "column" in front of things.

For example: There is a "hidden single" in **cell A7**:

- The **number 6** has to go in **cell A7** because **column A** needs a **number 6** and that is the only spot it could go. (Even though that cell could be a 3 as well.)

Rules (slides 64-69)

64

CHARACTER VOCABULARY

Rules

(Character's only ever rules)





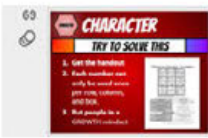
RULES

Six Cs CONNECTION: Critical Thinking

- Critical Thinking is about using criteria / rules to evaluate (make judgements) about whether something fits
- No emotion comes into the decision making process here. It either fits the rule or it doesn't.

Critical Thinking






	<p>Teacher Tip: You might need to clarify that the puzzle used to explain the rules is just an example puzzle.</p> <ul style="list-style-type: none"> The puzzle is a valid Sudoku puzzle that has one unique solution, but the sample puzzle we used in this rules section of the slideshow does not appear anywhere else. (i.e. it is not used in the puzzle handouts.) This is because we show some of the answers to this puzzle (in red) to prove each number can only be used once per column, row, and box. We didn't want students to try to memorize answers and cloud their logical thinking and sudoku strategies later on.
	<p>Is this correct?</p> <ul style="list-style-type: none"> Check to make sure you have all of the numbers from 1 to 9.
	<p>Is this correct? Check to make sure you have all of the numbers from 1 to 9.</p> <p>Teacher Prompt:</p> <ul style="list-style-type: none"> How did you check? (What strategy did you use to confirm that each number only appears once?) <p>Possible student answers:</p> <ul style="list-style-type: none"> Strategy #1: Go number by number in the row and see if it appears anywhere else. 6... does 6 show up twice in the row? No. 4... Does 4 show up anywhere else in the row? No. Strategy #2: Find 1, 2, 3, ... 9 in order and see if it is there.
	<p>Is this correct?</p> <ul style="list-style-type: none"> Check to make sure you have all of the numbers from 1 to 9. <p>We can call this region of 9 squares a bunch of things, but for now, let's be consistent and call it a box.</p> <ul style="list-style-type: none"> And a box has 9 cells.
	<p>Give out the Handout - Slideshow Puzzle</p> <p>TEACHER TIP:</p> <ul style="list-style-type: none"> Hand out the Slideshow Example, but don't let students start on it yet. You'll want to review growth mindsets in the next few slides Then leave slide 73 up while students are working.

Slideshow puzzle

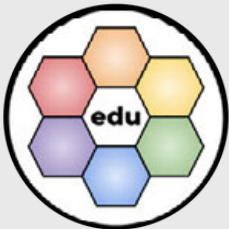


	<p>We recommend that everyone try the Slideshow Example puzzle first, before moving on to the actual puzzles.</p> <ul style="list-style-type: none"> The slideshow example is rated "Very Easy" by Sudoku Snake with a rating of 0.9 We started with a "Very Easy" puzzle so even a beginner could experience success. <p>Why? (Some of your kids will have done Sudoku in the past and want to try a more challenging puzzle.)</p> <ul style="list-style-type: none"> The Sudoku strategies used later on in this slideshow are based on this puzzle. We want students to try to figure out strategies first, before we give them ours. Starting off on the same puzzle at the beginning at least provides some common ground for students to help each other. Once they finish the Slideshow Example puzzle, they can move on to other more challenging puzzles. We guarantee we have some puzzles that will stump even the most seasoned expert.
--	--

Sudoku and Growth Mindset (slides 70-72)

70	 <p>Here are some sample phrases to say to each other (and for the teacher to say to you) to try to put each other into a growth mindset.</p> <p>According to Dweck (pg 175) -</p> <p>Here are some examples of praise that reinforces a fixed mindset:</p> <ul style="list-style-type: none"> "You learned that so quickly! You're so smart!" "Look at that drawing. Martha, is he the next Picasso or what?" "You're so brilliant, you got an A without even studying!" <p>Here's the message students hear:</p> <ul style="list-style-type: none"> If I don't learn something quickly, I'm not smart. I shouldn't try drawing anything hard, or they'll see I'm no Picasso. I'd better quit studying or they won't think I'm brilliant. <p>TEACHER TIP:</p> <ul style="list-style-type: none"> "... keep away from a certain kind of praise - praise that judges their intelligence or talent. Or praise that implies that we're proud of them for their intelligence or talent rather than for the work they put in." (Pg 177) Praise them for their efforts, and not intelligence, athleticism, etc (pg 176) <p>Here are more examples from the Mindset to adapt into your own words:</p> <ul style="list-style-type: none"> I love how you searched for strategies, kept at it, tried all kinds of solutions, and finally mastered it! (pg 176) "I know school used to be easy for you and you used to feel like the smart kid all the time. But the truth is that you weren't using your brain to the fullest. I'm really excited about how you're stretching yourself now and working to learn hard things."
71	
72	


Sudoku and Growth Mindset



Growth mindset phrases

- "I liked the effort you put in, but let's work together some more and figure out what it is you don't understand."
- "We all have different learning curves. It may take more time for you to catch on to this and be comfortable with this material, but if you keep at it like this you will."
- "Everyone learns in a different way. Let's keep trying to find the way that works for you."

Work period (slide 73) - 5-10 min

73


Students are working on **Handout - Slideshow Puzzle**

Round 1 Work Period (5 - 10 min)

- We suggest having this slide up while students are working, to encourage them to use Growth Mindset phrases as they work.
- We suggest keeping this first work period short: 5 to 10 minutes max. Here's why:
 - It doesn't let the "superstars" in the room blast far ahead in a race and reinforce the idea that speed matters. (Fixed Mindset)
 - It gives everyone a little opportunity to play with the numbers so they have a common ground when we look at strategies.
 - If someone does finish quickly, apologize that it was too easy for them, and let's see if we can't find a puzzle that will require a little more effort to tinker through.

TEACHER TIP:

- Post the solution to the puzzles at the back of the room (**Answers - Slideshow Puzzle**), so students don't have to see you to check to see if they're right.
- Students should know if their puzzle is correct (without having to check the answers) because
 - Each row will have the numbers 1-9
 - Each column will have the numbers 1-9
 - Each box will have the numbers 1-9
- If a bottleneck forms at the back with people trying to check their answers, get students to check with a partner first

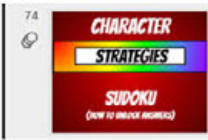
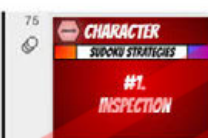

What do I do when I finish the Slideshow puzzle handout?

Work on the Sudoku Independent Work package.

(See lesson materials section for options.)



Sudoku Round 2
Sudoku Strategies #1-3 - 10 min
Sudoku Strategy 1. Inspection (slides 74-77)

	<p>TEACHER TIP: Some students will find these strategies very basic. That's okay.</p> <ul style="list-style-type: none">• Explain that the point of these lessons is to think about thinking (metacognition).• Encourage students to think of these lessons as examples of how to explain things. We're modeling how to communicate effectively, instead of saying, "I don't know, I just did it."• We're trying to develop a "growth mindset" - Some students have a fixed mindset because they think there are "smart" people, and "non-smart" people, and that's just the way it is. When, in fact, "smart" people simply use strategies without even realizing it.• The goal of this lesson is to make the hidden, visible. We are using hidden strategies in our mind, and explicitly talking about these strategies.
 	<p>Inspection is the strategy that most of us try when we first do sudoku puzzles. We just look at it and try.</p> <p>Some of us seem to have a head start in solving sudoku puzzles. Maybe we can remember a little more, or have a little more task persistence than the next person. And this is probably true in life as well.</p> <p>But the key idea here is that with strategies and a growth mindset, we can continually learn to deal with harder and harder puzzles.</p> <p>When we look at a harder 9 x 9 puzzle, some of us feel frustrated when we can't solve things by inspection.</p> <ul style="list-style-type: none">• And then we give up, or say we're just not a "sudoku" kind of person, or that this sucks.• And we look at other people who are able to solve sudoku puzzles and think they were born that way. <p>When we go through these puzzles and you get stuck...</p> <ul style="list-style-type: none">• don't say, "I can't do this."• Instead, say, "I can't do this yet."• And most importantly, keep trying different strategies until you finally unlock that part of the puzzle. <p>TEACHER TIP: We generated this 4x4 sudoku grid by using this website: https://www.sudokuweb.org/</p> <ul style="list-style-type: none">• You won't be able to create the same puzzle as the one in the slideshow, but you'll be able to generate a similar 4x4 puzzle.

Round 2
(strategies 1-3)



77

CHARACTER

INSPECTION

If you learn **how** to struggle, you're ahead of the game.

Work harder.

Work smarter.

Work better.

Work longer.

Work faster.

Work more.

Work less.

Work right.

Work wrong.

Work hard.

Work soft.

Work fast.

Work slow.

Work good.

Work bad.

Work happy.

Work sad.

Work angry.

Work calm.

Work excited.

Work bored.

Work focused.

Work unfocused.

Work motivated.

Work unmotivated.

Work confident.

Work unconfident.

Work brave.

Work shy.

Work kind.

Work mean.

Work nice.

Work nasty.

Work gentle.

Work rough.

Work quiet.

Work loud.

Work clean.

Work dirty.

Work neat.

Work messy.

Work organized.

Work disorganized.

Work responsible.

Work irresponsible.

Work honest.

Work dishonest.

Work truthful.

Work untruthful.

Work fair.

Work unfair.

Work just.

Work unjust.

Work right.

Work wrong.

Work good.

Work bad.

Work better.

Work worse.

Work best.

Work worst.

Work great.

Work terrible.

Work amazing.

Work awful.

Work fantastic.

Work horrible.

Work wonderful.

Work dreadful.

Work excellent.

Work poor.

Work superb.

Work magnificent.

Work pathetic.

Work marvelous.

Work monstrous.

Work magnificent.

Work monstrous.

Work magnificent.

Work monstrous.

This is an important key idea to introduce to your students about character and the importance of knowing about fixed mindsets and growth mindsets.

Sometimes students find sudoku easy.

- Or sometimes, students find getting good grades easy...
- or getting onto sports teams easy...

They have a few strategies (like inspection) that they use, and so far it's worked quite well for them.

- Or, they're good at memorizing facts, and so far that's the kind of tests they've had and they've **done** well at them,
- Or, they spend a lot of time **at** recess **playing** basketball, and they're playing with friends who are only **casual** about their sports.

But, what happens when the puzzles get harder?

- Or, the **class** gets harder. (You're in a university / college class and now everyone in the class was the top student of their old class.)
- Or, the competition gets tougher? (You're playing college ball and everyone there was the top athlete of their class.)

TEACHER TIP: Depending on what grade you teach, some students may have come from a different school in elementary school, and then moved up into middle school where they're not

- Many feeder schools have been pooled into one middle school or high school - so you have many stars in the same school now.
- You were a big fish in a small pond, and now you're the same sized fish (or smaller) in a big pond.

The puzzles get harder and harder. (Life gets harder and harder.)

- At a certain point, your strategies (i.e. Inspection) won't work as well.

If we learn how to struggle, if we learn how to develop a growth mindset, it helps us to deal with challenges as they get harder.

People in a fixed mindset might see their ability to solve sudoku puzzles as a reflection of how smart they are.

- They're smart because they solved the puzzle quickly.
- They're stupid because they can't do the puzzle.

People in a growth mindset might see their

According to Carol Dweck and her research in the psychology of success, "students with the fixed mindset stayed interested only when they did well right away. Those who found it difficult showed a big drop in their interest and enjoyment." (*Mindset*, pg 23)




What if things get harder?



Just knowing about mindset

	<p>Here are a few key ideas from Dweck's book that you might want to share with your students:</p> <ul style="list-style-type: none">• "just by knowing about the two mindsets, you can start thinking and reacting in new ways." (Pg 46)• "Even if people have a fixed mindset, they're not always in that mindset."<ul style="list-style-type: none">◦ In fact, in many of our studies, we put people into a growth mindset.◦ We tell them that an ability can be learned and that the task will give them a chance to do that.◦ Or we have them read a scientific article that teaches them the growth mindset.<ul style="list-style-type: none">■ The article describes people who did not have natural ability, but who developed exceptional skills.■ These experiences make our research participants into growth-minded thinkers, at least for the moment - and they act like growth-minded thinkers, too." (Pg 47)
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Sudoku Strategy 2. Start with the Most (slide 78-86)

<p>78</p> 	<p>The idea for this strategy comes from here:</p> <ul style="list-style-type: none">• Look for Easy Opportunities http://www.sudoku.com/how-to-play/sudoku-strategy-for-beginners/ <p>TEACHER TIP:</p> <ul style="list-style-type: none">• If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.• You could also use the Easel by TpT virtual handout
<p>79</p> 	
<p>80</p> 	<p>Which row is almost full? (Row 2)</p> <p>There's only one empty cell. What number could go here? Why?</p>



81

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

The answer is "2"

Which box is almost full? (Top left box)

- Cell B1 could be a 3
- Cell C3 could be a 3 or a 5

So, Cell B1 is a 3 and Cell C3 must be a 5.

82

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

Which column is almost full? (Column B)

Column B is missing 2 and 6...

- Cell B4 could be a 2 or 6
- Cell B5 could be a 2. (It can't be a 6 because there's a 6 in the row)

So, Cell B5 is a 2 and Cell B4 must be a 6.

83

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

84

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

85

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

86

CHARACTER

START WITH THE MOST

Find a row, column or box that is almost full.

- Which row, column or box is almost full?
- Which number is missing from that row, column or box?

Sudoku Strategy 3. Write down Candidates (slide 87-89)

87

CHARACTER

SUDOKU STRATEGIES

NO. 3. WRITE DOWN CANDIDATES

A "candidate" is just another way to say a possible number that could go there. We write down in little pencil marks at the top of the cells.

The idea for this strategy comes from here:

- A note on Pencil Marks: <https://www.learn-sudoku.com/pencil-marks.html>

TEACHER TIP:

- If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.
- You could also try the Easel by TpT virtual handout.

88

CHARACTER

WRITE DOWN CANDIDATES

Don't try to remember. Write down candidates. It's easier to remember what you've written down.

89

CHARACTER


VOYAGE

Candidates

Sudoku strategies



Sudoku Round 2 work period (slide 90) - 10 min

<div>90</div> <div></div>	<p>Round 2 Work Period (10 min)</p> <ul style="list-style-type: none">• We suggest having this slide up while students are working,<ul style="list-style-type: none">◦ To remind them of sudoku strategies discussed so far.◦ To encourage them to use Growth Mindset phrases as they work on the puzzles.• We suggest keeping this work period short. Here's why:<ul style="list-style-type: none">◦ It still doesn't let the "superstars" in the room blast far ahead in a race and reinforce the idea that speed matters. (Fixed Mindset)◦ It gives everyone a little opportunity to practice the strategies we just discussed, but hopefully not too bored before seeing new strategies.◦ If someone does finish quickly, apologize that it was too easy for them, and let's see if we can't find a puzzle that will require a little more effort to tinker through. <p>TEACHER TIP: Try to encourage using the word "strategy" as well as the name of the strategies.</p> <ul style="list-style-type: none">• As you walk around providing just in time support to struggling students, you can provide different levels of hints (scaffolded support):<ul style="list-style-type: none">◦ Find a number that they haven't unlocked yet on their puzzle.◦ Stage 1 support: Give the student the name of a strategy that will unlock that answer◦ Stage 2 support: Tell them which box (or row or column) to look at◦ Stage 3 support: Work through the strategy with them step-by-step.◦ Notice at no point, do we simply give them the answer to a cell. Instead, we provided them with help applying strategies.• Students who are really good at Sudoku could help others by providing them with Stage 1, 2, or 3 clues.<ul style="list-style-type: none">◦ And then this provides these students with practice explaining strategies, and reflecting on how strategies help us.◦ (It's all about making the hidden thinking, more visible!)
<p>OPTIONAL:</p>	<p>Students can do the review handout Review - Lesson A2</p>

Work period support



CHARACTER - LESSON A3: 45 min
Sudoku Round 3 & 4 (slides 91-124)

OVERVIEW

Sudoku Round 3 (20 min)

- Sudoku Strategies #4-5 (10 min)
 - Strategy 4. Go by number
 - Strategy 5. Pointing
- Sudoku Round 3. Work period (10 min)

Sudoku Round 4 (25 min)

- Sudoku Strategies #6-9 (15 min)
 - Strategy 6. Go by row
 - Strategy 7. Double Check
 - Strategy 8. Go by box
 - Strategy 9. Hidden Singles
- Sudoku Round 4. Work period (10 min)



MATERIALS

- Slideshow (Slideshow ALL, Slideshow - Section A, or Slideshow - Lesson A3)
- Puzzle Handouts (see lesson A2)
- Class set of Review - Lesson A3

Sudoku Round 3 - Sudoku Strategies #4-5 - 10 min

Sudoku Strategy 4. Go by number (slides 91-96)

	<p>One strategy is to go number by number. Others like to go row by row (slide 105)</p> <ul style="list-style-type: none">• Either way, the general idea is to have a system and be methodical so you don't miss things.• In this case, by doing "Go by number", it leads nicely to the next strategy, "Pointing" (slide 97)
	<p>TEACHER TIP:</p> <ul style="list-style-type: none">• If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.• You could also try the Easel by TpT virtual handout

Lesson
A3

Round 3
(Strategies 4,5)



93

CHARACTER

60 BY NUMBER

Let's try to do all of these boxes.

- Look at each empty cell. Could it be a 1?

94

CHARACTER

60 BY NUMBER

Let's try to do all of these boxes.

- Look at each empty cell. Could it be a 1?

95

CHARACTER

60 BY NUMBER

Let's try to do all of these boxes.

- Look at each empty cell. Could it be a 1?

96

CHARACTER

60 BY NUMBER

Let's try to do all of these boxes.

- Look at each empty cell. Could it be a 1?

Pick a box

- Look at each empty cell. Could it be a 1?

Try the next empty box

Sudoku Strategy 5. Pointing (slides 97-102)

97

CHARACTER

SUDOKU STRATEGIES

45. POINTING

98

CHARACTER

POINTING

If the only candidates of a box are in the same row, column or block, then those numbers can be removed from the other cells in that row, column or block.

99

CHARACTER

POINTING

If the only candidates of a box are in the same row, column or block, then those numbers can be removed from the other cells in that row, column or block.

Pointing might be a new strategy for students because you can use it in a box even though there might be two cells that could have the same candidate.

The idea for this strategy comes from here:

- Pointing: <http://www.sudokusnake.com/pointing.php>

TEACHER TIP:

- If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.
- You could also try the Easel by TpT virtual handout

100

CHARACTER

POINTING

If the only candidates of a box are in the same row, column or block, then those numbers can be removed from the other cells in that row, column or block.

101

CHARACTER

POINTING

If the only candidates of a box are in the same row, column or block, then those numbers can be removed from the other cells in that row, column or block.

102

CHARACTER

POINTING

If the only candidates of a box are in the same row, column or block, then those numbers can be removed from the other cells in that row, column or block.

There has to be a number "one" in the bottom row here ("Row 9").

If there's a number "1" in row 9 in the bottom middle box, it means you can't have a number "1" in the bottom row of the bottom left box.

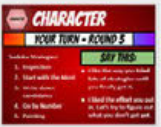
So, the number one has to go in Cell I9

Sudoku strategies



Sudoku Round 3. Work period (slide 103) - 10 min

103



We suggest having this slide up while students are working,

- To remind them of sudoku strategies discussed so far. (#1 - #5)
- To encourage them to use Growth Mindset phrases as they work on the puzzles.

We suggest keeping this work period short. Here's why:

- It still doesn't let the "superstars" in the room blast far ahead in a race and reinforce the idea that speed matters. (Fixed Mindset)
- It gives everyone a little opportunity to practice the strategies we just discussed, but hopefully not too bored before seeing new strategies.
 - Strategy #5 Pointing will likely be a new trick for some students, but it may not always be applicable.
- If someone does finish quickly, apologize that it was too easy for them, and let's see if we can't find a puzzle that will require a little more effort to tinker through.

TEACHER TIP: Try to encourage using the word "strategy" as well as the name of the strategies.


- As you walk around providing just in time support to struggling students, you can provide different levels of hints (scaffolded support):
 - **Stage 1 support:** Give the student the name of a strategy that will unlock an answer
 - **Stage 2 support:** Tell them which box (or row or column) to look at
 - **Stage 3 support:** Work through the strategy with them step-by-step.
 - Notice at no point, do we simply give them the answer to a cell. Instead, we provided them with help applying strategies.
- Students who are really good at Sudoku could help others by providing them with Stage 1, 2, or 3 clues.

Teaching
suggestions

Round 4
Strategies 6-9


Sudoku Round 4 - Sudoku Strategies #6-9 - 15 min
Sudoku Strategy 6. Go by row (slides 104-108)

104



At this point of the game, students may have already solved the puzzle on the screen and have moved onto other puzzles. But, the point here is just to brainstorm some strategies. So, based on the puzzle presented above, what numbers could go in each cell?


105






TEACHER TIP:

- If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.



	<ul style="list-style-type: none"> You could also try the Easel by TpT virtual handout
106 	<p>A "Hidden Single" is essentially when you are looking at a row (or column or box)</p> <ul style="list-style-type: none"> And a number only shows up once in that row (or column or box) <p>There is a strategy called Hidden Singles by Row or Column on the Sudoku Snake website: http://www.sudokuSnake.com/hiddensingles.php</p> <p>Essentially, if a number only shows up as a possibility in one cell of that row, then that cell MUST be that number</p> <ul style="list-style-type: none"> Even though there might be other candidates in that cell... Because the row must have that number, and it only shows up in that one cell. <p>In the example on the screen, this is not a Hidden Singles by Row because...</p> <ul style="list-style-type: none"> the number 3 could show up in cell B1 or cell E1 The number 2 could show up in cell I1 and E1 <p>You might have to flip back to the previous slide so students can see the possible candidates.</p>

Sudoku Strategy 7. Double Check (slides 109-111)

109 	<p>GO SLOWLY and double check your work</p> <ul style="list-style-type: none"> It's easy to make mistakes. When you think you figured out an answer, double check the row, the column, and the box region.
110 	<p>Cell B1 could be a 3</p> <ul style="list-style-type: none"> But, cell C3 could also be a 3 <p>So, based on the thinking we have done so far, we can't put a big 3 in cell B1 yet.</p>
111 	<ul style="list-style-type: none"> Yes, 3 is the correct answer for B1. If we "go by box" we'll see that cell C3 could be a 3 or a 5, and since B1 can only be a 3, it has to be the 3 and then cell C3 has to be the 5. But, at this point in the game, where we only looked at the first row, cell B1 could be a 3, but so could cell C3, so let's hold off until we get more info. The point of this is to use a simple example to get students to double check their work in a different way to confirm it's correct. <p>Note: I'm not a sudoku expert. And even if I was, it wouldn't mean that I haven't made a mistake or missed something.</p> <ul style="list-style-type: none"> If some of your students are really strong at sudoku because they're passionate at it and they've done a lot of puzzles, they may be able to spot mistakes in this tutorial. Fantastic. What a

Double
Check

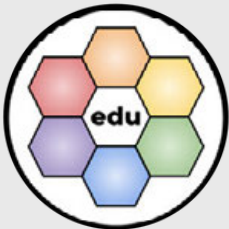


	<p>great opportunity to learn!</p> <ul style="list-style-type: none"> Let me know of any errors at support@educircles.org
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Sudoku Strategy 8. Go by box (slides 112-117)

<div>112</div> <div>113</div>	<p>This idea comes from:</p> <ul style="list-style-type: none"> Hidden Singles by box: http://www.sudokusnake.com/hiddensinglesbybox.php <p>TEACHER TIP:</p> <ul style="list-style-type: none"> If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard. You could also try the Easel by TpT virtual handout
<div>114</div> <div>115</div> <div>116</div> <div>117</div>	<p>3 is the only number in cell B1.</p> <ul style="list-style-type: none"> Cell C3 could be a 3 or a 5. This means that cell B3 has to be a 3 And that means cell C3 is left over with a 5 and has to be a 5. <p>Another way to say this is "there is a hidden single" in the top left box in cell C3.</p> <ul style="list-style-type: none"> Cell C3 must be a 5 because that is the only place where a 5 could go in that box. (And the box needs a 5)

Sudoku Strategies




Sudoku Strategy 9. Hidden Singles (slides 118-123)

<p>118</p>  <p>119</p>  <p>120</p> 	<p>This idea comes from:</p> <ul style="list-style-type: none">Hidden Singles: http://www.sudokusnake.com/hiddensingles.php <p>TEACHER TIP:</p> <ul style="list-style-type: none">If you are projecting onto a white board, you could try this strategy as a class and solve it on the whiteboard.You could also try the Easel by TpT virtual handout
<p>121</p>  <p>122</p>  <p>123</p> 	<p>There is a "hidden single" in cell A7:</p> <ul style="list-style-type: none">The number 6 has to go in cell A7 because column A needs a number 6 and that is the only spot it could go. (Even though that cell could be a 3 as well) <p>There is a "hidden single" in cell A9:</p> <ul style="list-style-type: none">Likewise, the number 5 has to go in cell A9 because the column needs a 5 and that is the only spot it could go in the column. (even though that cell could have a 3 as well.)

Explanation of example

Sudoku Round 4. Work period (slides 124) - 10 min

<p>124</p> 	<p>Round 4 Work Period (10 min)</p> <ul style="list-style-type: none">We suggest having this slide up while students are working,<ul style="list-style-type: none">To remind them of sudoku strategies discussed so far. (#1 - #9)To encourage them to use Growth Mindset phrases as they work on the puzzles.We suggest keeping this work period short. Here's why:<ul style="list-style-type: none">It still doesn't let the "superstars" in the room blast far ahead in a race and reinforce the idea that speed matters. (Fixed Mindset)It gives everyone a little opportunity to practice the strategies we just discussed, but hopefully not too bored before seeing new strategies.<ul style="list-style-type: none">Strategy #9: Hidden Singles will likely be a new
--	--



Teaching
Tips

	<p>trick for some students, but it may not always be applicable.</p> <ul style="list-style-type: none">○ If someone does finish quickly, apologize that it was too easy for them, and let's see if we can't find a puzzle that will require a little more effort to tinker through. <p>TEACHER TIP: Try to encourage using the word "strategy" as well as the name of the strategies.</p> <ul style="list-style-type: none">• As you walk around providing just in time support to struggling students, you can provide different levels of hints (scaffolded support):<ul style="list-style-type: none">○ Find a number that they haven't unlocked yet on their puzzle.○ Stage 1 support: Give the student the name of a strategy that will unlock that answer○ Stage 2 support: Tell them which box (or row or column) to look at○ Stage 3 support: Work through the strategy with them step-by-step.○ Notice at no point, do we simply give them the answer to a cell. Instead, we provided them with help applying strategies.• Students who are really good at Sudoku could help others by providing them with Stage 1, 2, or 3 clues.<ul style="list-style-type: none">○ And then this provides these students with practice explaining strategies, and reflecting on how strategies help us.○ (It's all about making the hidden thinking, more visible!)
OPTIONAL:	Students can do the review handout (Review - Lesson A3)



CHARACTER - LESSON A4: 40 min
Sudoku Round 5 Work Period (slides 125-138)

OVERVIEW

Sudoku Round 5 (40 min)

- Overcoming Obstacles (Perseverance) Strategies
- Sudoku Round 5. Work period (30 min)




MATERIALS

- Slideshow ([Slideshow ALL](#), [Slideshow - Section A](#), or [Slideshow - Lesson A4](#))
- Puzzle Handouts (see lesson A2)
- Note - there is no review for Lesson A4 as it's a work period.

Sudoku Round 5 - 40 minutes

Bringing it back to building character (slides 125-126)

	<p>By this point, some students (and teachers) will be tired of doing Sudoku. Here are some obstacles:</p> <ul style="list-style-type: none">• It's hard and the answers aren't easy to find• We experienced failure - the strategies didn't work right away• We might not like this kind of thinking.• We might not think we're good at Sudoku. <p>Some students might say, "Why do I have to do this? I'm not getting marked on Sudoku and I'm not going to use Sudoku in a job."</p> <p>How often have we heard these similar comments:</p> <ul style="list-style-type: none">○ Why do I have to do art? I'm never going to be an artist when I grow up○ Why do I have to learn about this historical person? How will that help me in the real world?○ Why do I have to learn this mathematical concept? My parents never use this concept in their jobs!○ Why do I have to do this homework? I'm never going to need this skill or information, and if I do, I'll just look it up a YouTube video about it. <p>Remember, the point of doing Sudoku in this chapter about Character is NOT to become experts at Sudoku or logical thinking</p> <ul style="list-style-type: none">• The point is share a common experience and struggle.• And, by learning how to struggle through something until we experience success is how we build character.• Sudoku is a great puzzle because there are so many difficulty levels that eventually, everyone hits the wall.
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Lesson
A4

Bringing it back
to Character

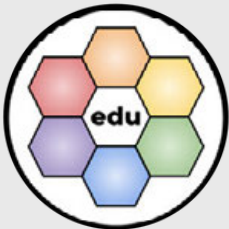


	<ul style="list-style-type: none"> What do we do when we hit the wall? (Eventually in life or in your job, you're going to have to do something you don't like. Will you have strategies to help you struggle through the obstacles?)
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Overcoming Obstacles (Perseverance) Strategies (slides 127-132) - 10 min

<div>127</div> <div>CHARACTER STRATEGIES</div> <div>OBSTACLES (How to overcome them)</div>	<p>Imagine this scenario:</p> <p>You want to pass a message to someone in the classroom on the other side of the wall.</p> <ul style="list-style-type: none"> You can try to push through the wall to get to that person, but it won't work. <p>Teacher Prompt: How else could you get this message to your friend in the next classroom?</p> <ul style="list-style-type: none"> Explore other solutions. Some strategies to overcome obstacles may be more effective than others. Why yes, you could use a sledgehammer to make a hole in the wall, but then you've created other problems for yourself.
<div>128</div> <div>CHARACTER STRATEGIES</div> <div>OBSTACLES (How to overcome them)</div>	
<div>129</div> <div>CHARACTER STRATEGIES</div> <div>OBSTACLES (How to overcome them)</div>	
<div>130</div> <div>CHARACTER STRATEGIES</div> <div>OBSTACLES (How to overcome them)</div>	<p>Do a quick survey of the class. What's an obstacle they've faced during the last four rounds of Sudoku?</p> <p>TEACHER NOTE: If you're wondering why the obstacles have different numbers, it's because they're from our poster series about bstacles: https://www.teacherspayteachers.com/Product/8-Common-Classroom-Obstacles-and-40-Empowerment-Strategies-posters-slideshow-3776053</p> <ul style="list-style-type: none"> The order of obstacles doesn't really matter. Are there any other obstacles that your students are facing? <ul style="list-style-type: none"> I can't remember the strategies I don't have a pencil... As you go through strategies to overcome obstacles <ul style="list-style-type: none"> What other strategies would help? Which perseverance strategy are you going to try today?
<div>131</div> <div>CHARACTER STRATEGIES</div> <div>OBSTACLES (How to overcome them)</div>	<p>Think about the previous obstacles</p> <ul style="list-style-type: none"> I don't want to I'm confused. I'm stuck. I'm not sure what to do. I tried, but it didn't work. I give up. <p>Read the strategies to the students</p> <ul style="list-style-type: none"> Have students discuss how this strategy could apply in our Sudoku rounds Ask students which strategy would help them more right now.


Overcoming obstacles



Perseverance Strategies

	<p>Possible student answers:</p> <ul style="list-style-type: none"> • Do 1 thing at a time <ul style="list-style-type: none"> ◦ Sometimes I'm applying a strategy, I get distracted by my friends, and I just should focus on doing the puzzle ◦ Sometimes I'm doing a strategy like "go by number", and then I start cancelling out candidates, and I forget what number I'm on and I miss one. Next time, I should just "go by number" and then after doing all of the numbers, I should go back and cancel out candidates. • Set a timer <ul style="list-style-type: none"> ◦ I don't want to do Sudoku, but I guess I can focus and actually try for just 10 minutes. ◦ I'm stuck. I tried everything. I'm going to set a timer for 5 minutes, and then if I'm still stuck, I'll ask someone for a clue about which strategy to try.
	<p>Possible student answers:</p> <ul style="list-style-type: none"> • Review Instructions <ul style="list-style-type: none"> ◦ I don't remember the "pointing" strategy so I'll ask the teacher to share the slides with us so I can look at it. • Restart <ul style="list-style-type: none"> ◦ I'm stuck on the Sudoku puzzle. I made a mistake, but when I go back, I can't figure out where the mistake is. I'm going to restart with the same puzzle but a fresh handout. I'm also going to start with a different strategy than last time to see if I get different numbers...

Sudoku Round 5. Work period - (slide 133) - 10 min

	<p>Round 5 Work Period (10 min)</p> <ul style="list-style-type: none"> • We suggest having this slide up while students are working, <ul style="list-style-type: none"> ◦ To remind them of sudoku strategies discussed so far. ◦ To encourage them to use Growth Mindset phrases as they work on the puzzles. • This time, as you go around helping students, ask them which perseverance strategy they're trying. <p>TEACHER TIP: Try to encourage using the word "strategy" as well as the name of the strategies.</p> <ul style="list-style-type: none"> • Stage 1 support: Give the student the name of a strategy that will unlock that answer • Stage 2 support: Tell them which box (row or column) to look at • Stage 3 support: Work through the strategy with them step-by-step. • Notice at no point, do we simply give them the answer to a cell. Instead, we provided them with help applying strategies. <p>Students who are really good at Sudoku could help others by providing them with Stage 1, 2, or 3 clues.</p>
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6Cs Character A - START HERE - Page 7 of 11

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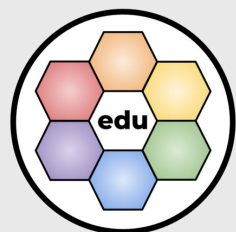
Specific things to know about this product: 6Cs Character A version 2022-07-28

- See lesson plan

6Cs Character A - START HERE - Page 8 of 11

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Changelog

I occasionally update and improve these products over time. You know, add a new coat of paint, touch up a few words, fix any mistakes, etc.

Once you purchase this lesson package, you get future updates for free!

- Download the most recent version: [6Cs Character A](#)
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SINGLE PDF FILE update 2022-07-27

1. This product has been simplified into a bundle of single TpT **digital download PDF** products:
 - <https://links.educircles.org/tpt/6cs-character-a>
 - <https://links.educircles.org/tpt/6cs-character-bc>
2. The original product was a bundle of TpT **Google Drive folder** products. The TpT Google Drive folder products will be archived:
 - <https://www.teacherspayteachers.com/Product/6Cs-Character-Folder-1-5842110>
 - <https://www.teacherspayteachers.com/Product/6Cs-Character-Folder-2-5842125>
 - <https://www.teacherspayteachers.com/Product/6Cs-Character-Folder-3-5842142>
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 - <https://www.teacherspayteachers.com/Product/6Cs-Character-Folder-5-7306893>
3. If you purchased an older TpT Google Drive folder product, please email Mike@educircles.org

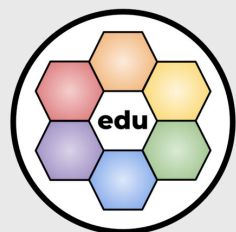
This product now has a Single PDF to print (with File Table of Contents and all handouts)

- **I added a digital learning version (Easel by TpT)**
- **I added Microsoft versions for all files**
- **Updated teaching content:**
 - Replaced the YouTube video for The Rock (slides 139-142); updated lesson plan discussion points.
 - Combined the lesson review for the videos into a single lesson (Lesson B1)
 - Updated the self-evaluation handout
- **Content has been moved around and renamed** (to put the puzzles with the other activities in Section A.)
 - Lesson A1 - Growth Mindset survey - no change
 - Previous lessons B1, B2 (Sudoku) were moved into Section A (with the Growth Mindset survey)
 - Lesson B1 (slides 40-90) was renamed Lesson A2 (40-90)
 - Lesson B2 (slides 91-124) was renamed Lesson A3 (91-124)
 - Sudoku sections of Lesson B3 (slides 125-138) was renamed Lesson A4 (125-133)
 - Lesson B3 and B4 (video analysis) stayed in Section B and combined into a single lesson:
 - 6Cs Character BC - Slideshow - Lesson B1 (134-133)

6Cs Character A - START HERE - Page 9 of 11

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- Other changes
 - Files are now packaged by section (A. Growth Mindset Survey + Puzzles, B/C Video + Consolidation) instead of splitting Google Drive folders by use (i.e. Print and Teach, Edit the documents, Google Classroom, etc.)
 - Simplified file names using descriptive words (handout, slideshow).
 - Minor changes to formatting / layout
 - Combined all handouts into a single PDF for easier printing
 - Removed Google Slides versions of handouts (and replaced with Easel by TpT)

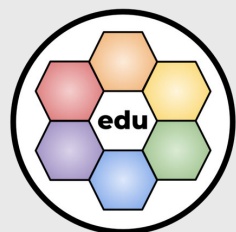
Version 2.8 FILE Table of Contents update on October 5, 2021

This update is about trying (again!) to make all of the files less overwhelming. No changes to teaching content.

- Added a File Table of Contents with one-click links to the files needed by lesson (**File 0**)
- Created a Google Drive Folder with a UNIT OVERVIEW and each lesson plan as a separate file PDF (**Folder 5**)
- Updated the READ ME FIRST file
 - Added a START HERE link to the FILE Table of Contents to make it more obvious in thumbnail mode on Google Drive
 - Updated the Copyright / Technical info stuff.
- Added © symbol to some files as a reminder that Educircles content is copyright.
- Renamed Lesson Overview to Unit overview (**File 3**)
- Added Social Emotional Learning wording to heading
- Fixed some copy/paste errors
- Put Google Doc Sudoku solutions (**File 5d** and **File 5g**) back into Folder 2

Version 2.0 Distance Learning update on July 28, 2020

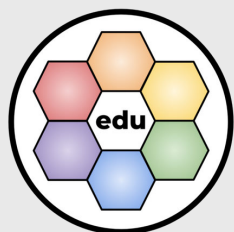
- Main content is identical to version 1.0 but this product now contains additional files to make it easier for online use and distance learning
- **The files are all in Google Drive for 1-click easy copying of the lesson folder into your Google Drive.** No more copying view-only files.
- The slideshow in Google Slides format includes 1 large file (**File 3**) if you are teaching in the classroom, but you also get 3 smaller files in case you are only teaching 1 section: (**File 3** Lesson A, B, C)
- **Easy uploading to Google Classroom assignments by lesson.** The slideshow is now also broken up into individual lessons that you can upload: (**File 3** Lesson A1, B1, B2, B3, B4, C1, C2)
- **Added NEW lesson review handouts** for lessons that didn't have handouts (**File 4** A1, B1, B2, B3, B4)
- **Adapted for Google Classroom**
 - The Growth Mindset survey (**File 5a**) and the Sudoku puzzles (**File 5g, 5h, 5i, 5j, 5k**) are now also available in Google Slides format so students can click and drag responses.
 - The vocabulary builder (**File 5b**) and the Venn Diagram (**File 5d**) are now converted into Google Slides format (so students can type responses directly in the graphic organizers).
- File numbers and lesson timing have changed
- The Rock and Ellen YouTube videos from version 1 are no longer available so they have been replaced with new YouTube videos.
- Created tutorial video to show how to play Sudoku on Google Slides <https://youtu.be/S2xeMreGZiq>

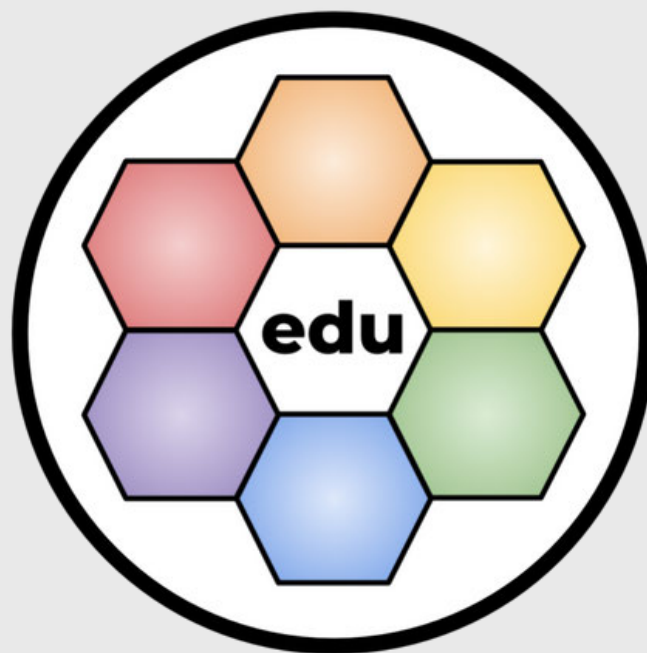


Version 1.0: Initial release of Character on August 2018

- This version included a zipped file with Microsoft Powerpoint, Google Slides, Microsoft Word, and PDF
- If you have purchased this product but would also like a copy of the Microsoft Powerpoint and Word versions, please email me at support@educircles.org
- Note: You will need to install the Bangers (comic book) font which I use for titles and headings. (The free font and installation information is included in the zipped file.)
- This version only includes the slideshow lessons in a single file. Additional content in Version 2.0 is not available in MS Powerpoint or Word format.

PREVIEW
do not print





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