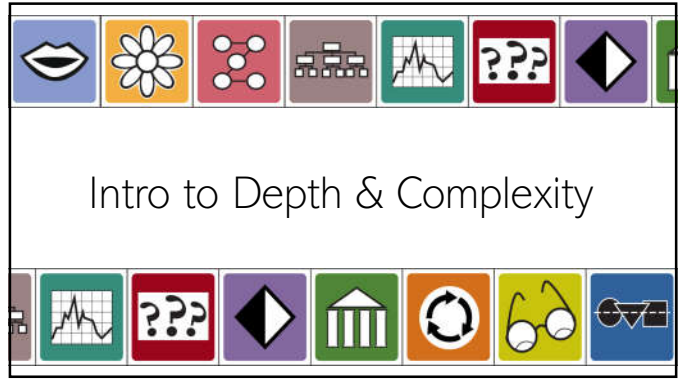


1



2

**DEPTH & COMPLEXITY**

a **FRAMEWORK** for  
academic  
exploration to help  
raise thinking skills

3

THE DEPTH AND COMPLEXITY FRAMEWORK IS A SET OF TOOLS THAT **ALLOW TEACHERS TO DIFFERENTIATE** FOR ANY GRADE LEVEL OR CONTENT AREA IN A WAY THAT IS **STRAIGHTFORWARD TO IMPLEMENT AND EFFECTIVE.**

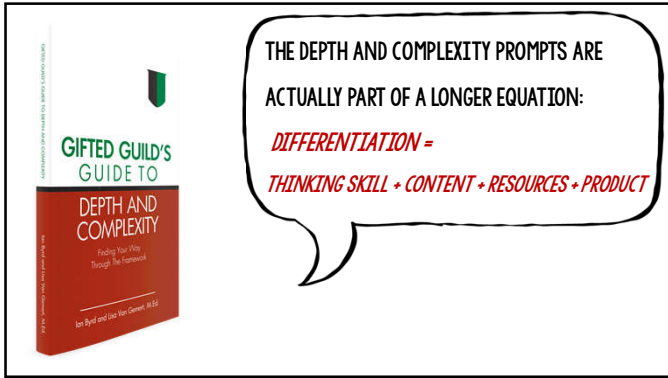
4

IT IS COMPOSED OF **ELEVEN ELEMENTS REPRESENTED BY A SET OF ICONS OR PICTURES**, ALONG WITH SEVERAL OTHER COMPONENTS THAT TEACHERS USE TO RAISE THE THINKING LEVEL IN THE CLASSROOM.

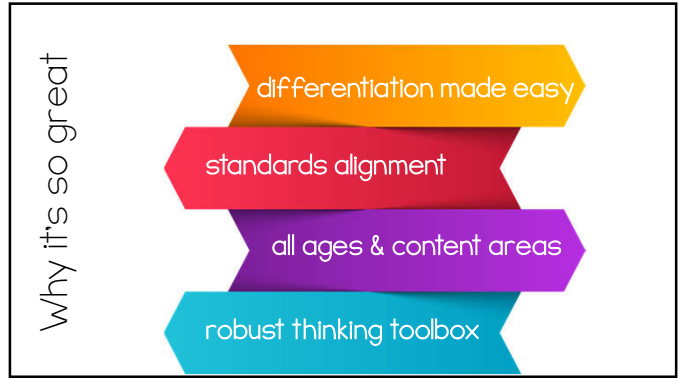
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THE DEPTH AND COMPLEXITY FRAMEWORK IS **PRIMARILY A DIFFERENTIATION TOOL**. IT ADJUSTS HOW STUDENTS APPROACH THE CONTENT THEY ARE LEARNING ABOUT.

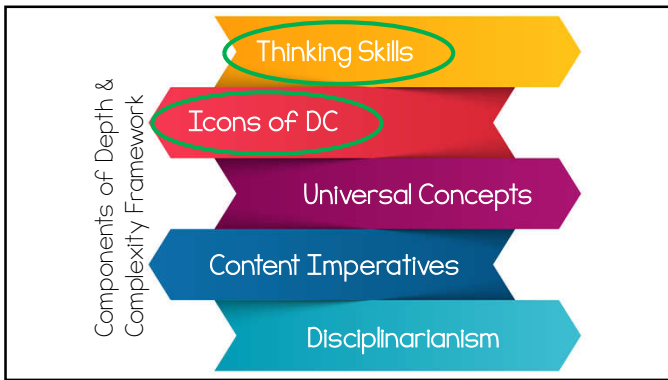
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7



8



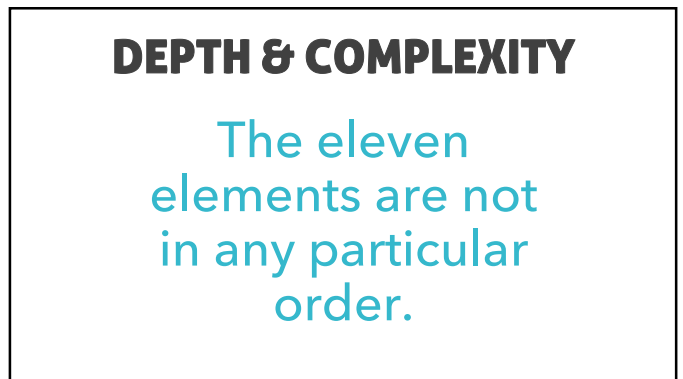
9



10



11



12

## Why We Use Emojis

13

*second part:*  
The Pick Four

14

**Ethics**

15

values *What is Right?*  
 fairness philosophies  
 controversy  
 STANDARDS  
 JUSTICE morals

16

Should great art belong to private owners or public institutions? Is it fair for such beauty to be owned by one person? [Cite a character for each position and, using examples from the text, defend their point of view.]

17

**99 strange collective animal names**  
*Whether it's a shrewdness of apes or a zeal of zebras, lots of animals have bizarre names when they cluster into crowds.*

**1<sup>st</sup>, we'll have a little fun with crazy names for groups of animals.**

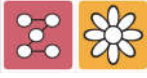
18



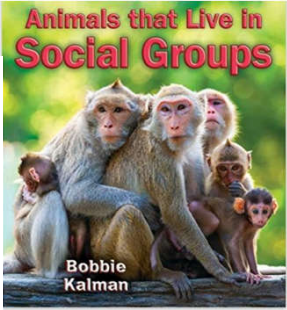
I'll flip the classroom & have them watch this video at home.



19



Next, they'll come back to class & we'll read this book, looking for connections between it and the video.



20

**Why Live in Groups**

There are several major disadvantages to living in groups:

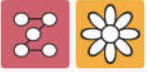
1. Greater competition for food, mates, sleeping sites
2. Increase parasite and disease load.

There is an incidental reason why some animals live in groups. E.g., birds don't nest on cliffs because they are attracted by a scarce resource: cliff swallows.

**How do individuals benefit by living in groups?**

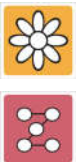
1. **Cooperative food collection.** Wolves hunt together. By doing so each can more easily track and take down large game. Although the individual has to share meat, each still benefits from group hunting. Group hunting is less important in primates. Chimps hunt some but meat is not a major part of their diets. Group hunting is important in many human societies, however.
2. **Sleeping together to conserve warmth.** This explains why individuals form groups at night but it does not explain why groups are maintained during the day.
3. **Shared information.** By forming groups, individuals can share information. For example, frugivores let each other know where fruit trees are (reciprocity).
4. **Protection from predators.** There are three reasons why individuals form groups to avoid predation.

My advanced learners will read a scholarly article instead.



21

Next, the on level students will create a tree map classifying animals by the reasons they group.



```

graph TD
    Root[ ] --- Safety[safety]
    Root --- Food[food]
    Root --- Social[social]
    Safety --- S1[ ]
    Safety --- S2[ ]
    Safety --- S3[ ]
    Food --- F1[ ]
    Food --- F2[ ]
    Food --- F3[ ]
    Social --- Soc1[ ]
    Social --- Soc2[ ]
    Social --- Soc3[ ]
    
```

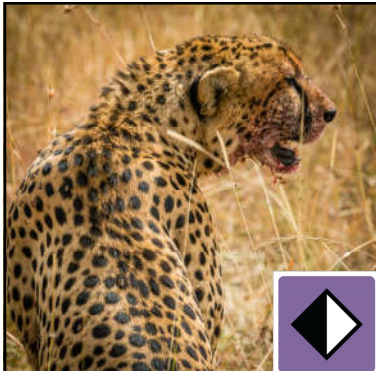
22



My advanced students will create a persuasive piece (brochure or commercial) encouraging the polar bear to begin living in groups.




23

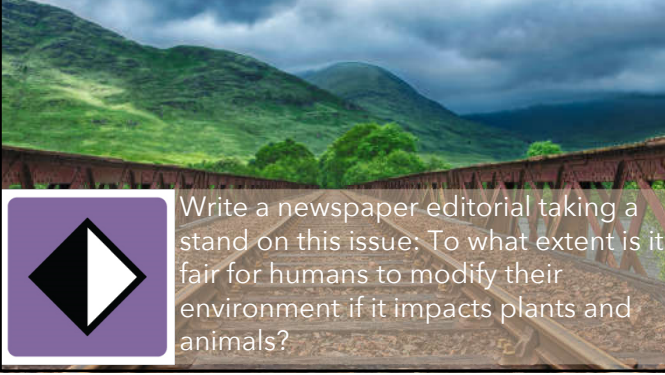



Students will debate:

Resolved: It is fair for packs of animals to hunt in order to kill a solitary animal.




24





Write a newspaper editorial taking a stand on this issue: To what extent is it fair for humans to modify their environment if it impacts plants and animals?

25


Evaluate the  fairness of charging \$5.50 for a pound of butter if 25% of a pound costs \$1.28.

26



What are the problems you run into when doing long division?

27



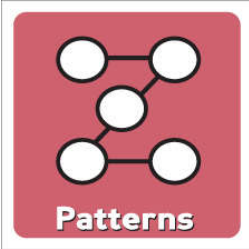
Rank those problems in order from most important/common to least.

28



The most important/common issue in long division is \_\_\_\_\_ because it impacts \_\_\_\_\_ in this way \_\_\_\_\_.

29



30

**Plot is Pattern**

Outline the plot of your story.

31

Figure 1      Figure 2      Figure 3

[visualpatterns.org](http://visualpatterns.org)

32

**Multiplication Arrays**

Directions: Circle the problem shown by the array.

	$4 \times 5 = 20$		$5 \times 7 = 35$
	$6 \times 3 = 18$		$7 \times 7 = 49$
	$4 \times 6 = 24$		$5 \times 5 = 25$
	$6 \times 3 = 18$		$4 \times 5 = 20$
	$6 \times 5 = 30$		$5 \times 5 = 25$
	$6 \times 8 = 24$		$5 \times 5 = 25$
	$9 \times 2 = 18$		$4 \times 7 = 28$
	$9 \times 2 = 18$		$8 \times 4 = 32$
	$9 \times 2 = 18$		$4 \times 8 = 32$

How does this pattern allow you to solve the problem?

33

Differentiate It:  
Compare and contrast the heroic journey of Katniss with that of Theseus.

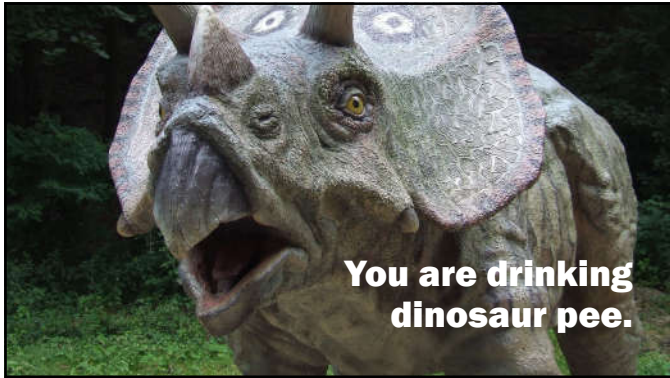
34

Where and how does Katniss break the heroic archetypal pattern? Why does Collins not follow the pattern exactly? Does this make Katniss more or less heroic?

35

How does/does not Katniss follow the pattern of the heroic archetype?

36



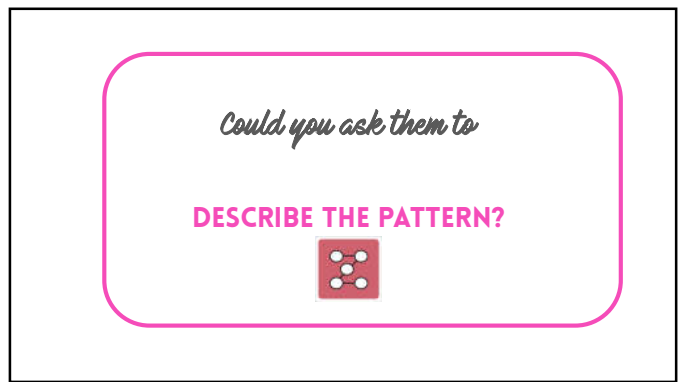
37



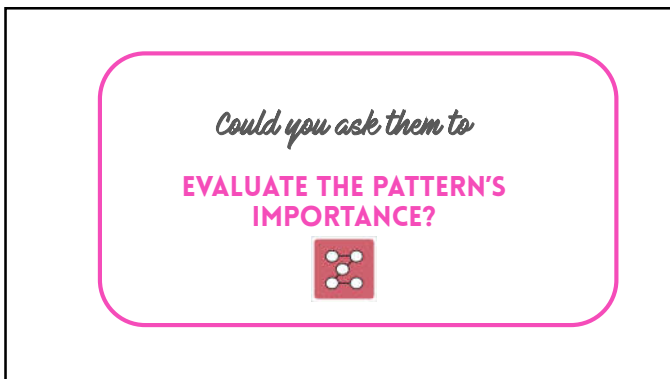
38



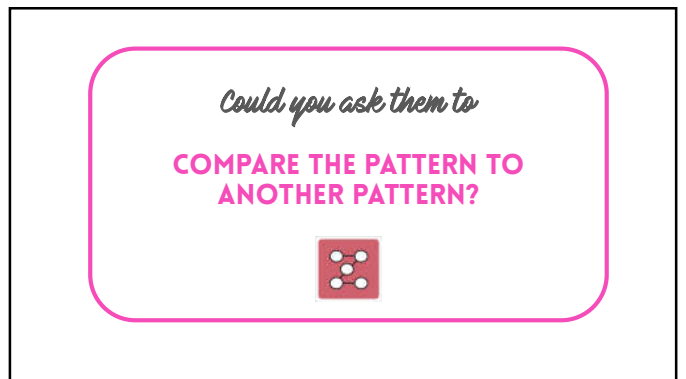
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
41



42

Could you ask them to

**IDENTIFY PRIMARY AND SECONDARY PATTERNS?**



43

Could you ask them to


**RECOGNIZE WHEN/WHERE A PATTERN BREAKS?**



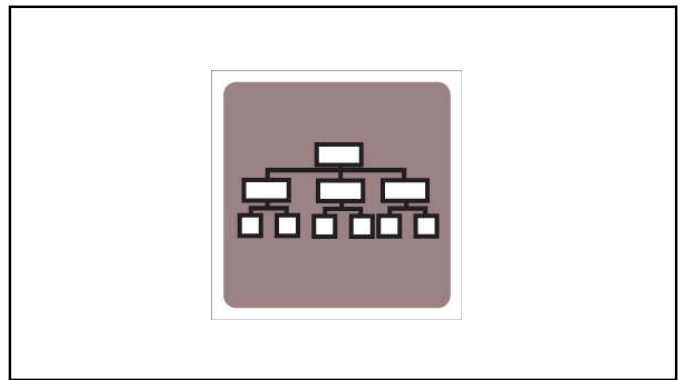
44

Could you ask them to

**SEE THE PATTERN OUT OF SEQUENCE AND FIX IT?**



45



46

**RULES INCLUDE:**


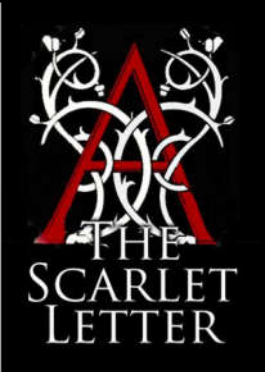


- standards
- directions
- methods
- organization
- usual behavior

47

Differentiate it:

Compare the rules society imposes on women in *The Scarlet Letter* to contemporary mores. Argue either that a) the rules have changed or b) the punishments are more subtle.


48



In *The Scarlet Letter*, are the rules society imposes on women fair?

How does it punish the breaking of those rules?

Who else is punished besides the rulebreaker and how?

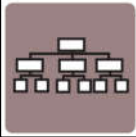


49

What rule of Roman numerals are these numbers breaking? Fix them.


19 = XVIV

100 = LL



50


How is the behavior of Stuart Little different from that of real mice?



51

Which one does not belong?

31	28
23	29





52

Which one does not belong?

NATO	Treaty of Versailles
Truman Doctrine	Marshall Plan

What are the similarities between this and pre-WWI US policy?

53



54

How does point of view affect perception of reality? What are opposing views?

55




56




57



58

	 <p>FOREST FIRE animals &amp; vegetation</p>	

59

	 <p>SOME STORY character one &amp; character two</p>	

60

Which is more affected by gravity, the moon or Earth?



61

Debate: Because of gravity, planets with large masses are bossier than planets with a smaller mass.

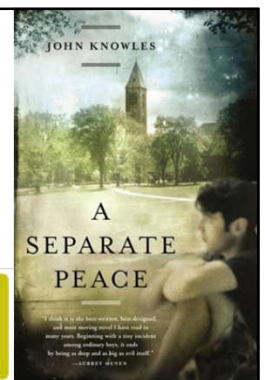


62



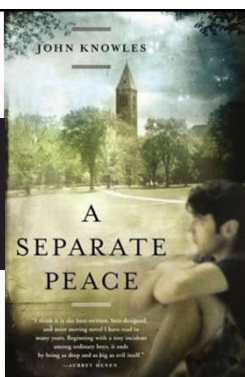
63

Analyze two conflicts in the story from the perspectives of Finny and Gene.



64

Create a cause and effect chain that traces the origins of those conflicts.

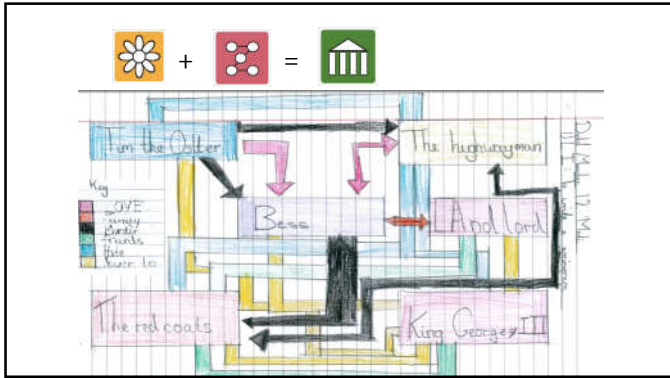


65

Using 🌸 details from the story, show the 🎲 patterns of the relationships between the characters.

🏠 Analyze those patterns to determine what they say about the difference between the bonds of friendship and family.

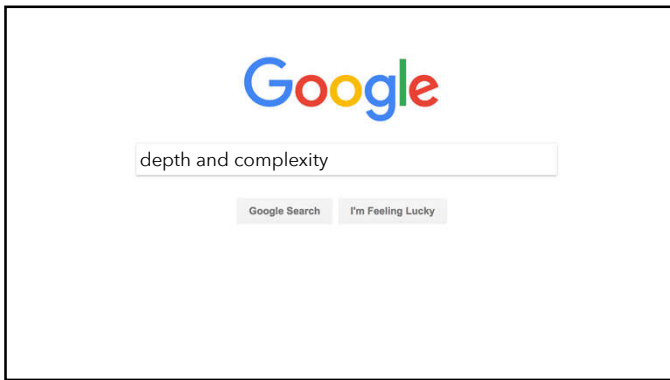
66



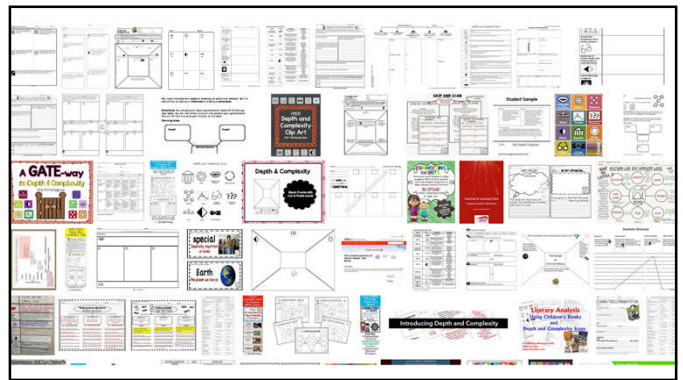
67

*third part:*  
Let's go even deeper

68



69



70


Depth	Icon	Definition	Example
Language of the Discipline	Lips	What vocabulary terms are specific to the content or discipline?	Terms, Jargon, Acronyms, Special phrases, Terms, Slang, Abbreviations
Details	Flower	What are the defining features or characteristics of the content and ideas?	Parts, Factors, Attributes, Variables, Distinguishing Traits, Predictability, Repetition
Patterns	Red square with dots	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	Missing Parts, Incomplete Ideas, Discrepancies, Unresolved issues, Ambiguity, Structure
Unanswered Questions	Red square with '???'	What information is unclear, missing, or unavailable? What evidence do you need? What has not yet been proven?	What structure underlies this
Rules	White triangle	What are the defining features or characteristics? Find examples and evidence to support opinions and ideas.	
Trends	Building	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	
Ethics	Black triangle	What information is unclear, missing, or unavailable? What evidence do you need? What has not yet been proven?	
Big Ideas	Building	What are the defining features or characteristics? Find examples and evidence to support opinions and ideas.	
Across the Disciplines	Gears	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	
Changes over Time	Gears	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	
Different Perspectives	Gears	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	


Based upon the work of Sandra Kaplan


71


of	Lips	What vocabulary terms are specific to the content or discipline?	Tools Jargon Icons Acronyms Special phrases Terms Slang Abbreviations
	Flower	What are the defining features or characteristics? Find examples and evidence to support opinions and ideas.	Parts Factors Attributes Variables Distinguishing Traits Predictability Repetition
	Red square with dots	What elements reoccur? What is the sequence or order of events? Make predictions based on past events.	
	Red square with '???'	What information is unclear, missing, or unavailable? What evidence do you need? What has not yet been proven?	Missing Parts Incomplete Ideas Discrepancies Unresolved issues Ambiguity Structure
		What structure underlies this	

72

What are the  rules of multiplication?

What are the  patterns in Shakespeare's sonnets?


What is the  big idea of the War of 1812?


What are the  essential details of a forest?


73


Book Title: \_\_\_\_\_ Name: \_\_\_\_\_


Author: \_\_\_\_\_


 What is the main theme of this story?


 Do you notice any patterns in this book?

 Are you left with any unanswered questions?

 What changes over time? What doesn't change? What impact might this story have on the future?

 What special writing techniques does the author use? Give examples.

 What moral or ethical issues are raised in this book? What controversies exist?


 How would this book or story be different if it were written from a different point of view?


74


Name: \_\_\_\_\_

Book Title: \_\_\_\_\_


Author: \_\_\_\_\_


 What is the main theme of this story?


 What special writing techniques does the author use? Give examples.


 Do you notice any patterns in this book?

75


 Are you left with any unanswered questions?


 What moral or ethical issues are raised in this book? What controversies exist?

 How would this book or story be different if it were written from a different point of view?


 What changes over time? What doesn't change?

76

 What changes over time? What doesn't change? What impact might this story have on the future?

 How would this book or story be different if it were written from a different point of view?

77



78

Name: \_\_\_\_\_ Date: \_\_\_\_\_

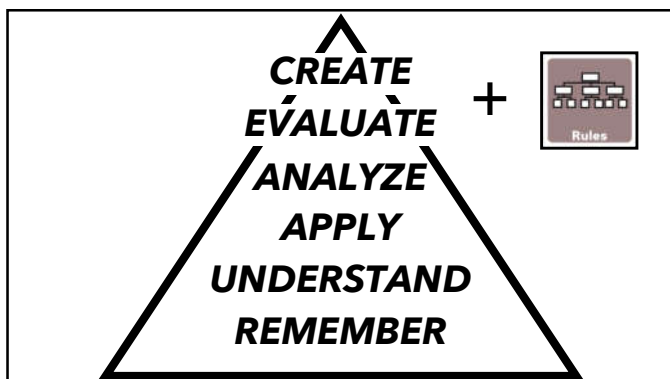
Objective: \_\_\_\_\_

79

80

81

82



83

List the rules of the US Constitution.

Contrast the rules of the US Constitution with those of Japan's Constitution.

Apply the rules of Japan's constitution to the US. What would it be like?

Judge which rules in the US Constitution are least fair.


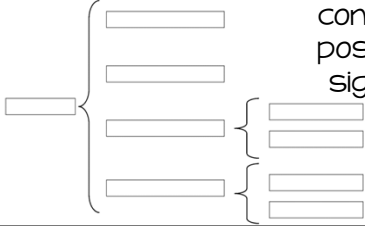
Create the rules for a new constitution.

84

Pick **one** character from the story.


Identify **four** traits of that character.

For **two** of the traits, list **two** consequences of that trait. If the consequence is positive, put a + sign next to it.

85

Thinking of what you just identified and considered, do you think the character's traits were a hindrance or a help to him/her and why?




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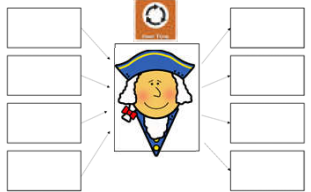
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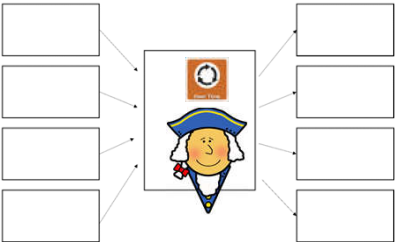
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86


Think of four reasons George Washington should have been a king instead of the president. Then, on the other side of the Thinking Map, think of four future consequences that would have happened if he had become a king.



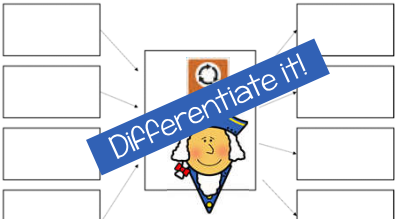
87



Is it fair for one person to be the king or queen for life? Why would it be better or worse to take turns?




88







**Differentiate it!**

Is it possible for a truly free people to have a king or queen? If not, is England really free? Would the English agree they are less free?




89

 <p>Name FOUR words mathematicians would use to solve this problem.</p>	<p>Solve the problem.</p> 
 <p>Does making multiplication the first step mean it's more important than the other steps?</p>	<p>What is the Big Idea of this type of problem?</p> 

90

What do you think is a blue whale's favorite number and why?



What animal is the closest land animal to the blue whale in size AND personality?

What would happen if you moved the blue whale up one level in the food chain?

Why is it a good idea or not for one animal to be so much bigger than the other animals in the ocean?

91

Wrapping It Up

92