

Content Imperatives

1

ORIGIN: the beginning of the idea

CONTRIBUTION: how factors affect an idea

CONVERGENCE: impact of factors coming together

PARALLEL: how ideas can be similar

PARADOX: how an idea can be pulled in different directions

2

up your game



3



Content Imperatives are the *expansion pack*.



4

This: Combining with elements

Decide which factors **CONTRIBUTED** the most to make the **ETHICAL** problem in the story more/less complicated?

5

Not this: Using in isolation

What **CONTRIBUTED** to the story?

6

This: Combining with elements

Decide which math skills/concepts in **PATTERNS** & **RULES** of math **CONVERGED** to allow you to solve the problem?

7

Not This: Using in Isolation

Decide which math skills/concepts **CONVERGED** to allow you to solve the problem?

8



9

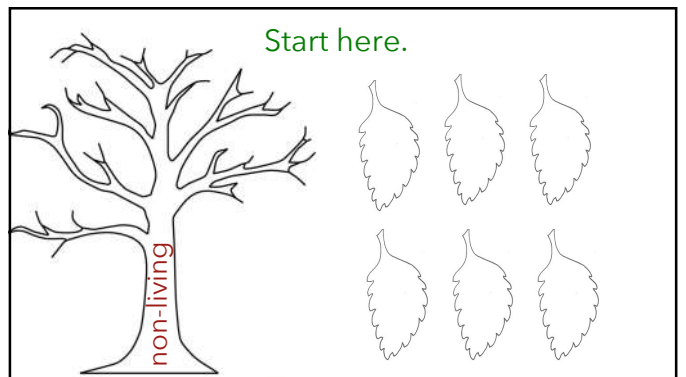


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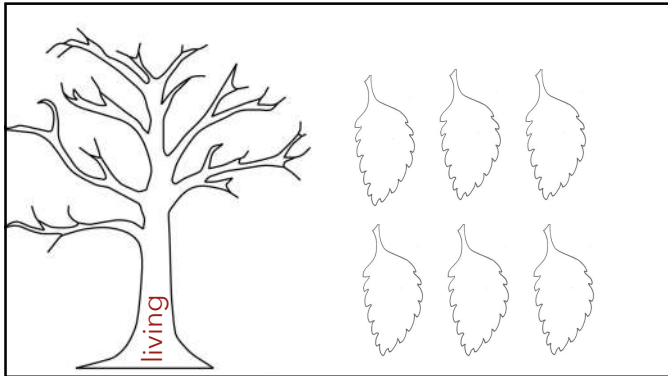
Let's say you want them to get here:

Compare the **details** that make something living vs. non-living. How would you rank the **parallels** between living and non-living things on a scale of 1 - 5? How similar/dissimilar are living things from non-living things?

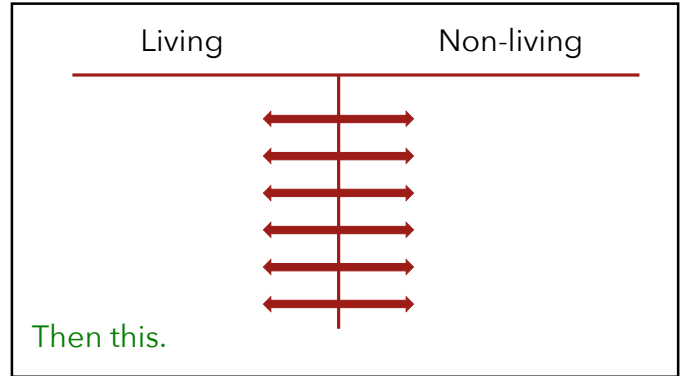
11



12



13



Then this.

14

Pick a popsicle stick and analyze the thing on it using your trees and chart. Is it **living** or **non-living**?

Then this.

15

If it was **living**, think of something as close to it as possible that is **non-living**. What would have to change to make it **non-living**?

16

If it was **non-living**, think of something as close to it as possible that is **living**. What would have to change to make it **living**?

17

Compare the **details** that make something living vs. non-living. How would you rank the **parallels** between living and non-living things on a scale of 1 - 5? How similar/dissimilar are living things from non-living things?

And that's how you get them here.

18



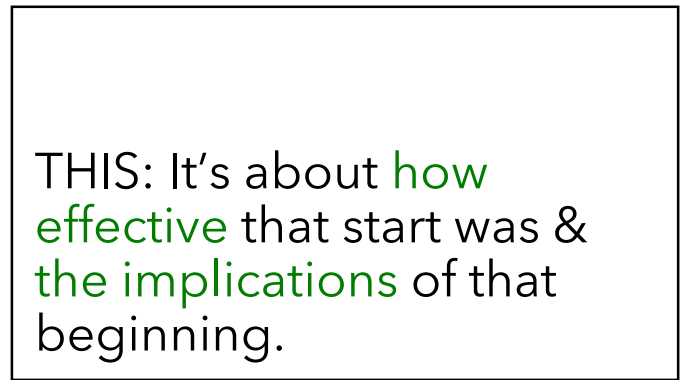
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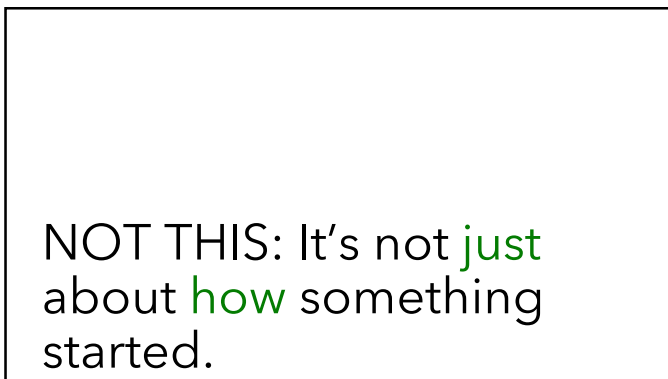
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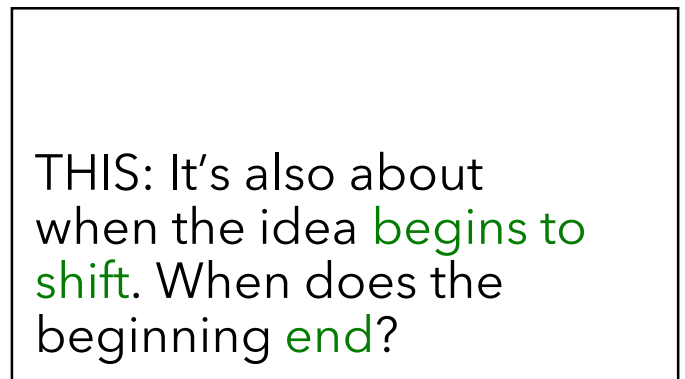
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22



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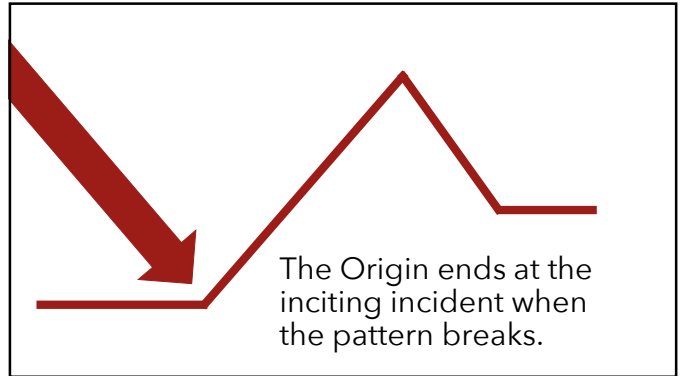


24

In plot, the exposition is the Origin.



25



26

In what ways did the Origin foreshadow the conflict in the story?



How was the resolution similar/different from the Origin?

27

What is the best first step in solving this inequality?

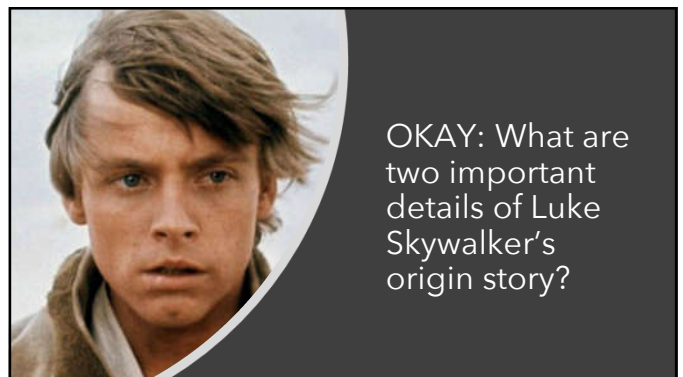
$$5x - 3 \geq 2?$$

28

What sparked x to break off from y?



29



30



EVEN BETTER:
How important is Luke Skywalker's origin story to the central conflict?

31



BETTER YET:
Which one detail of Luke's origin story could you change that would fundamentally change the central conflict in the story?

32



GOOD:
Assuming a typical path, trace this river from its origin to this delta.

33



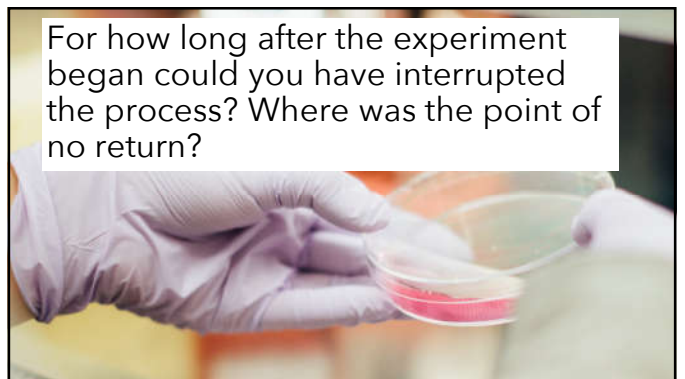
BETTER: Assume this river's origin is in the mountains. How would changing the origin to a plain affect it?

34



BEST: How could you alter the origin of a river to make it more or less hospitable to aquatic life?

35



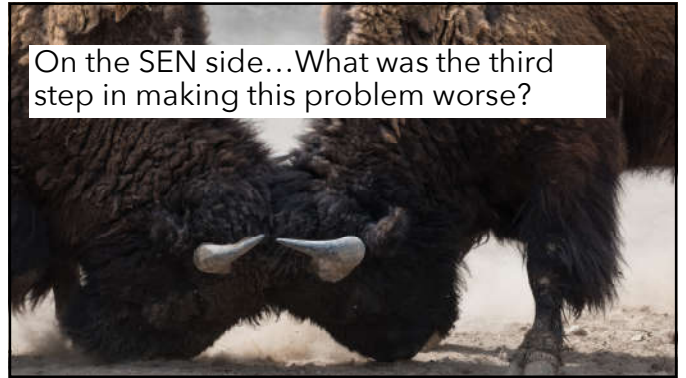
For how long after the experiment began could you have interrupted the process? Where was the point of no return?

36



On the SEN side...How would so-and-so say this disagreement began?

37



On the SEN side...What was the third step in making this problem worse?

38



On the SEN side...If you could change one choice you made at the beginning of this argument, what would it be?

39



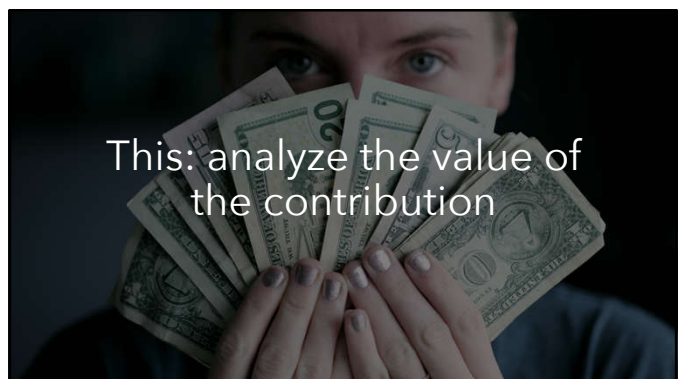
Contribution

40



CONTRIBUTION: how factors affect an idea

41



This: analyze the value of the contribution

42

Not This: look only at **what**
the contribution is/was

43

Whose contribution was
more significant, the
chicken or the pig?

44

Note:

Contribution is not always **positive**.

45

This:

In what way did _____ confuse
the characters, increasing the
conflict?

46

Not (Just) This:

How did these actions contribute to
the conflict?


47

This:

Whose contribution had the most
deleterious effect?

48

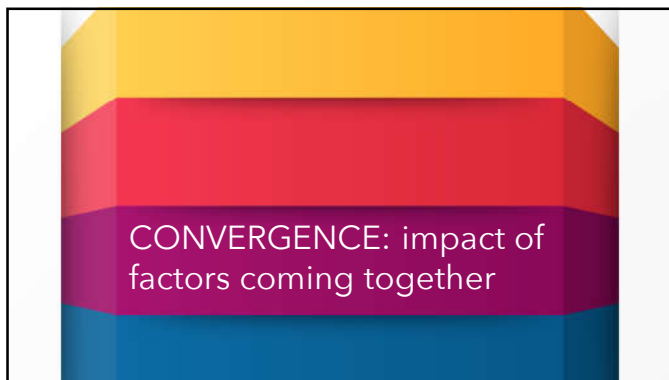
This:

How would the river see  its contribution to the develop of the canyon? Would wind erosion have the same perspective?

49

Convergence

50



51

Con- with or together
vergere- to bend, turn, or turn toward

52



53

This: analyzing the impact of everything coming together at one time

54

Not This:
looking at sequential events

55

We're not just looking at if there was a convergence; we're **analyzing the impact** and effect of this convergence.

56

Which factors converge to make this problem more difficult?

$$\begin{cases} 2x_1 + x_2 = 7 \\ 6x_2 - 2x_3 + x_4 = 7 \\ 2x_3 - 3x_4 = 13 \end{cases}$$

57

GOOD: Which of your math skills must converge to solve this problem?

$$\begin{cases} 2x_1 + x_2 = 7 \\ 6x_2 - 2x_3 + x_4 = 7 \\ 2x_3 - 3x_4 = 13 \end{cases}$$

58

BETTER: Which is the most important of the math skills converging to help you solve this problem?

$$\begin{cases} 2x_1 + x_2 = 7 \\ 6x_2 - 2x_3 + x_4 = 7 \\ 2x_3 - 3x_4 = 13 \end{cases}$$

59

GOOD: How did the convergence the Louisiana Purchase, the Gold Rush, the idea of Manifest Destiny, and the Oregon Trail lead to Westward Expansion?



60

EVEN BETTER: Which of the converging factors had the most impact on Westward Expansion?



61

Parallel

62

PARALLEL: how ideas can be similar

63

Find the unexpected connection.

64

Ian's fave: In what ways is the human body like a volcano?

[patterns & details]

65

For best results, the parallels shouldn't be too obvious.

66

How are trains like buses?

67

conjugations
v
How are ~~trains~~ like buses?

68

Use it simply.

69

How is multiplication like cooking?
Which patterns in x, y, z are similar?
How are democracies & republics similar?
Create a parallel scenario...
What is the ___ equivalent of ___?

70

Or more complexly.

71

Cell division is like _____
because _____.

| | |
|---------|-----------|
| a river | skydiving |
| an iron | cooking |

72

The Age of Expansion is like _____ because _____.

| | |
|---------|-----------|
| a river | skydiving |
| an iron | cooking |

73

Writing an essay is like _____ because _____.

| | |
|-------------|---------|
| a recipe | dancing |
| a gift card | a storm |

74

Solving a problem is like _____ because _____.

| | |
|-------------|---------|
| a recipe | dancing |
| a gift card | a storm |

75

SEN Connection:

What did you do to solve that problem you had last month that you could use to solve this problem?

76

SEN Connection:

How is this similar to how you felt when...?

77

SEN Connection:

Think of a character in a movie whom you are acting most like right now.

78

OKAY: In what ways are condiments and content imperatives similar?

79

BETTER: In what ways are content imperatives like clothes?

80

Paradox

81

PARADOX: how an idea can be pulled in different directions

82

There should be some tension.



83

How can these things both be true simultaneously?

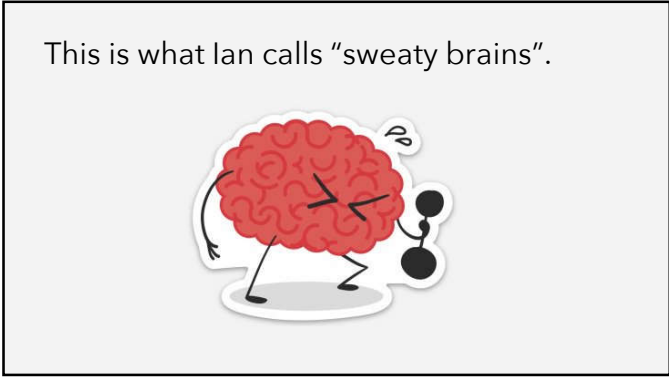
84

What is ironic?

85



86



87



88



89



90



Not (Just) This:
How is pushing
like pulling?

91

This: How could we best solve this paradox?

In the US and UK,
I'll use . as a
decimal point and ,
to break up large numbers...



... and in Europe,
I'll do precisely
the opposite.



<https://mathwithbaddrawings.com/2017/02/01/historys-most-evil-mathematicians/>

92

Not This: Where is a decimal point used to
break up large numbers? Where is it not?

In the US and UK,
I'll use . as a
decimal point and ,
to break up large numbers...



... and in Europe,
I'll do precisely
the opposite.



<https://mathwithbaddrawings.com/2017/02/01/historys-most-evil-mathematicians/>

93

Who was least happy with the
Great Compromise of the
Constitutional Convention?

Evaluate the fairness of
having two chambers of
congress. Who is most
benefitted? Who is most
harmed?

94

Combine with elements.

Make their brains a little sweaty.

Keep the thinking level high.

Scaffold them to higher heights.

Use with SEN also.

95

Content Imperatives

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