Systems & System Models

Please complete the questions in the slides for homework to make up the days you missed. :)

Establishing Discussion Norms

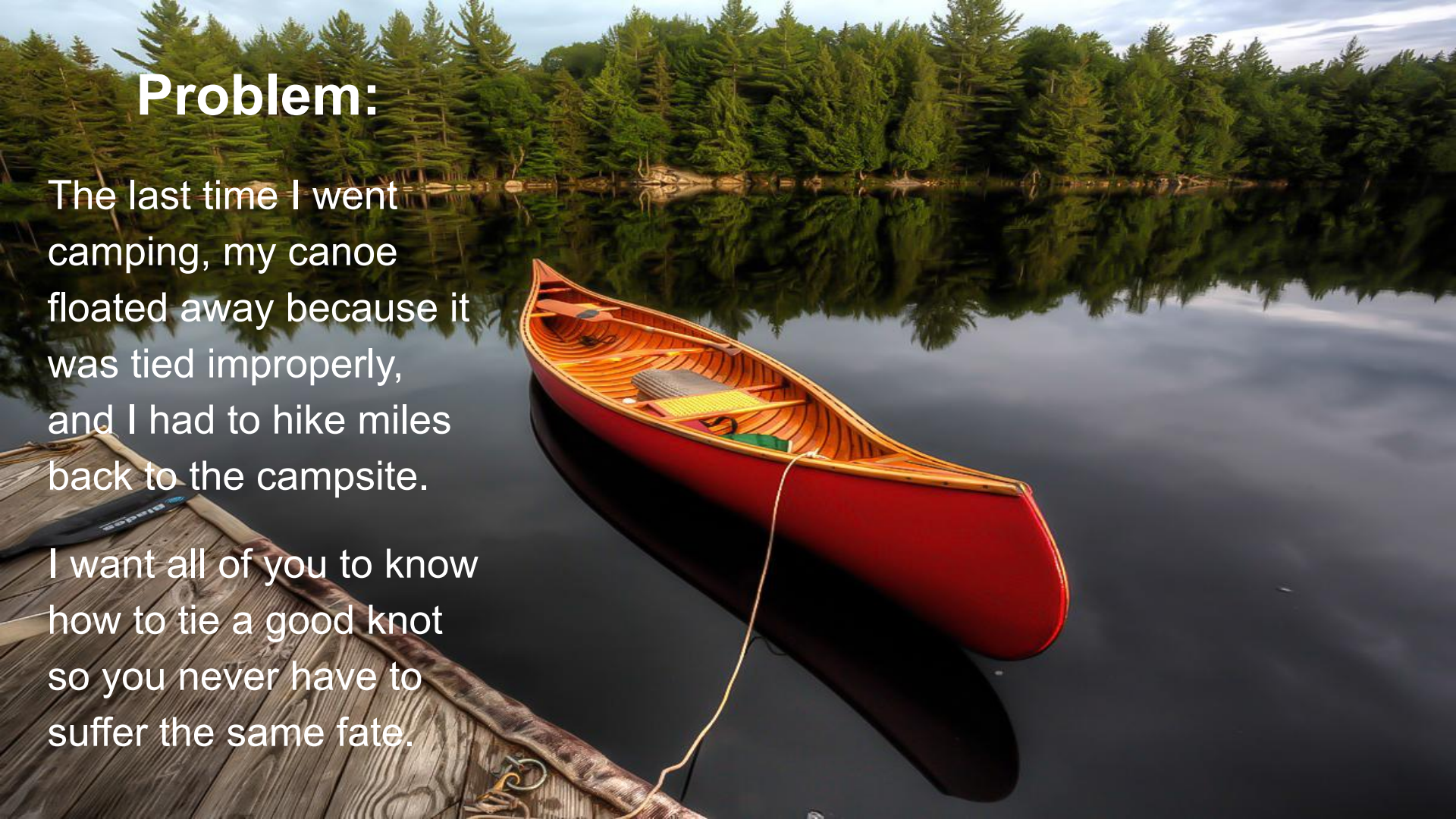
As you watch the video notice how the students behave.

https://inquiryproject.terc.edu/prof_dev/resources/video_cases/video_case.cfm%3F&case_type=cc&case_grade=5&case_num=1&case_return=library&case_step=step2.html

Anchoring Experience Question

What is one way to understand how complicated systems work?

Please copy this on to your paper. It does not need to be answered.



Problem:

The last time I went camping, my canoe floated away because it was tied improperly, and I had to hike miles back to the campsite.

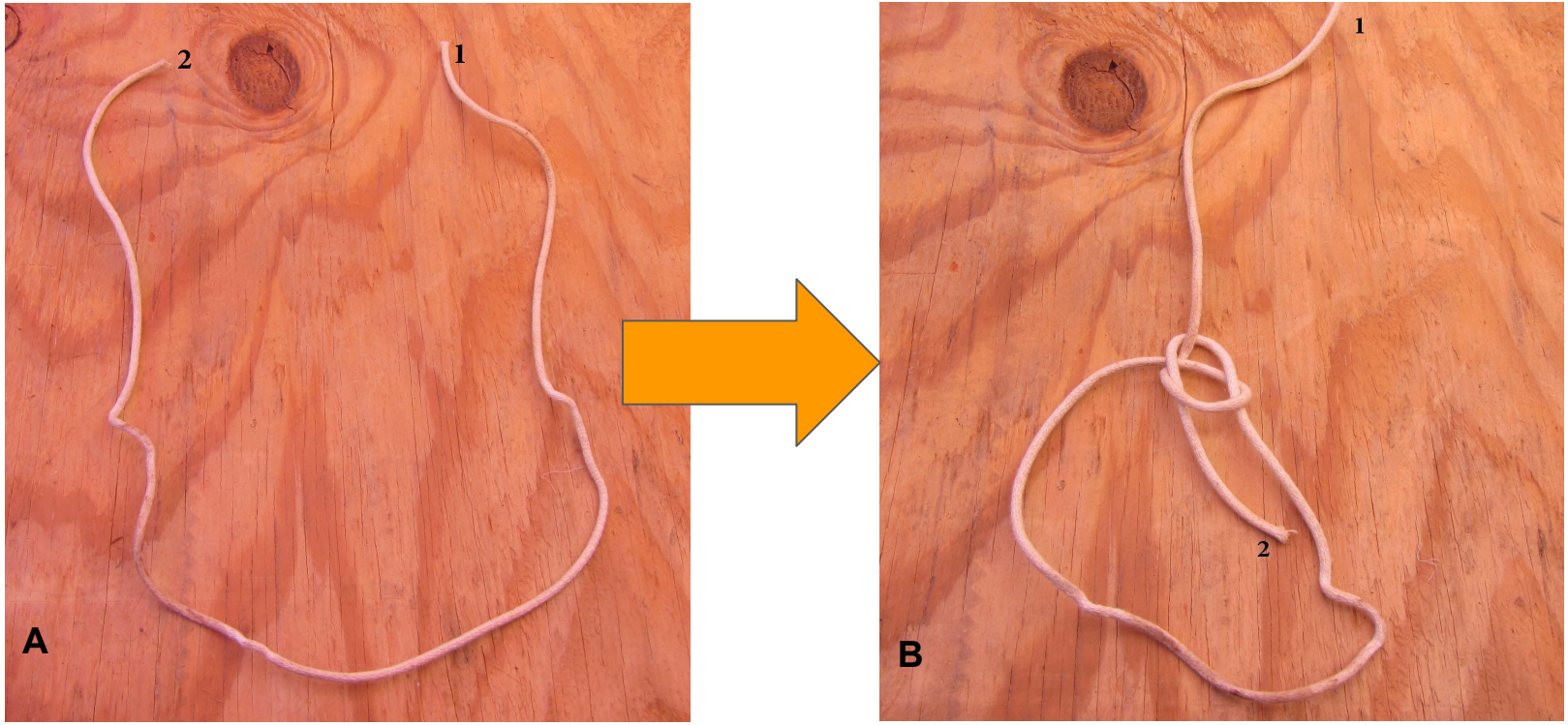
I want all of you to know how to tie a good knot so you never have to suffer the same fate.

Watch the video and tie the knot he shows

Copy this chart on to your paper & answer the questions

Video showing...	
Question	**Answer**
Is the video helping you learn how to tie the knot? Why or Why not?	
Are there any distractions in the video, or things unrelated to the knot?	

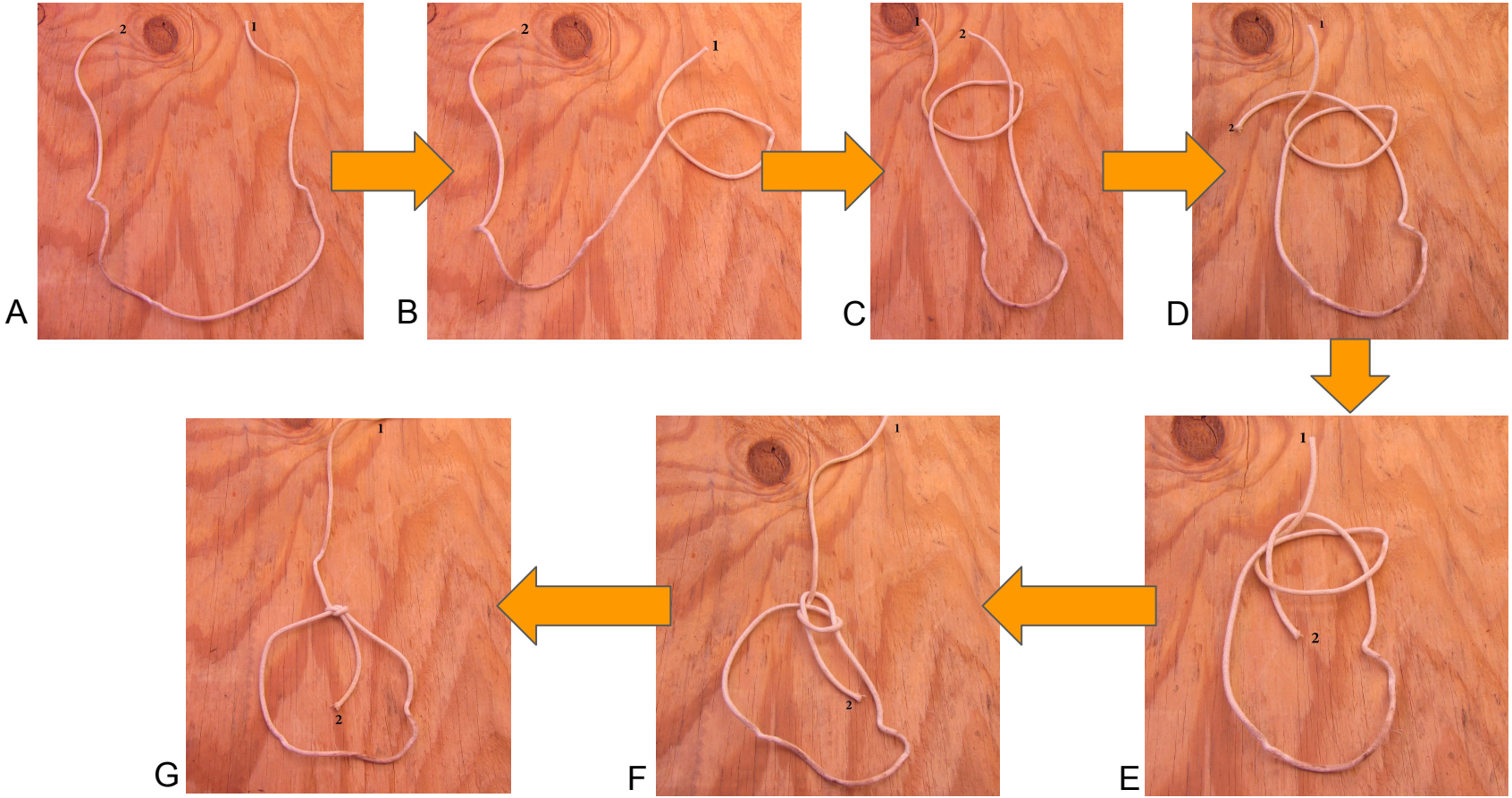
Look at this model and try to tie the knot



Copy this chart on to your paper & answer the questions

This model showed...	
Question	**Answer**
Is this model helping you learn how to tie the knot? Why or Why not?	
Is there anything else that could be added to help you tie the knot?	

Look at this model and try to tie the knot



Copy this chart on to your paper & answer the questions

This model showed...	
Question	**Answer**
Is this model helping you learn how to tie the knot? Why or Why not?	
Is there anything else that could be added to help you tie the knot?	

Copy this chart on to the paper & answer the questions

Question	Answer
Which was more useful: the video, model 1, or model 2? Why?	
Why is simplifying the process important when explaining how it works?	
Can you **over**simplify?	
What is one way to understand how complicated systems work?	

Example of a Rube Goldberg Machine

Uncovering Your Ideas Question

If, as a class, you had to make an exact model of the machine in the video, how would you do it?

Modeling

1. What will be more efficient: for everyone to make their own model or for everyone to work on a small piece and put them together to form a class model? Why?

2. How should we divide up the device?

Create a Model

Draw your part of the machine with your group

Share Your Ideas

How are the models the same?

How are the models different?

What are the different parts of your individual models?

Are some models easier to understand? Why?

Are there any changes necessary to make our models better?

Share Your Ideas

What has to happen to get your model to do what it is designed to do, and does this come from within the model or from outside the model?

What are ways that the different parts of your model interact?

Does anything come out of your model or are there any outputs to your model?

What would happen if we took away one piece of your model? Would it still function as it has been designed?

Copy this chart on to your paper & answer the questions

This model showed...	
Question	**Answer**
Is this Rube Goldberg Machine one system, a bunch of systems, or both? Why?	
How are the parts of your model related to one another?	
Why did you include the parts you did?	
Which parts of your model come from a previous step?	
Which parts of your model leave to start the next step?	