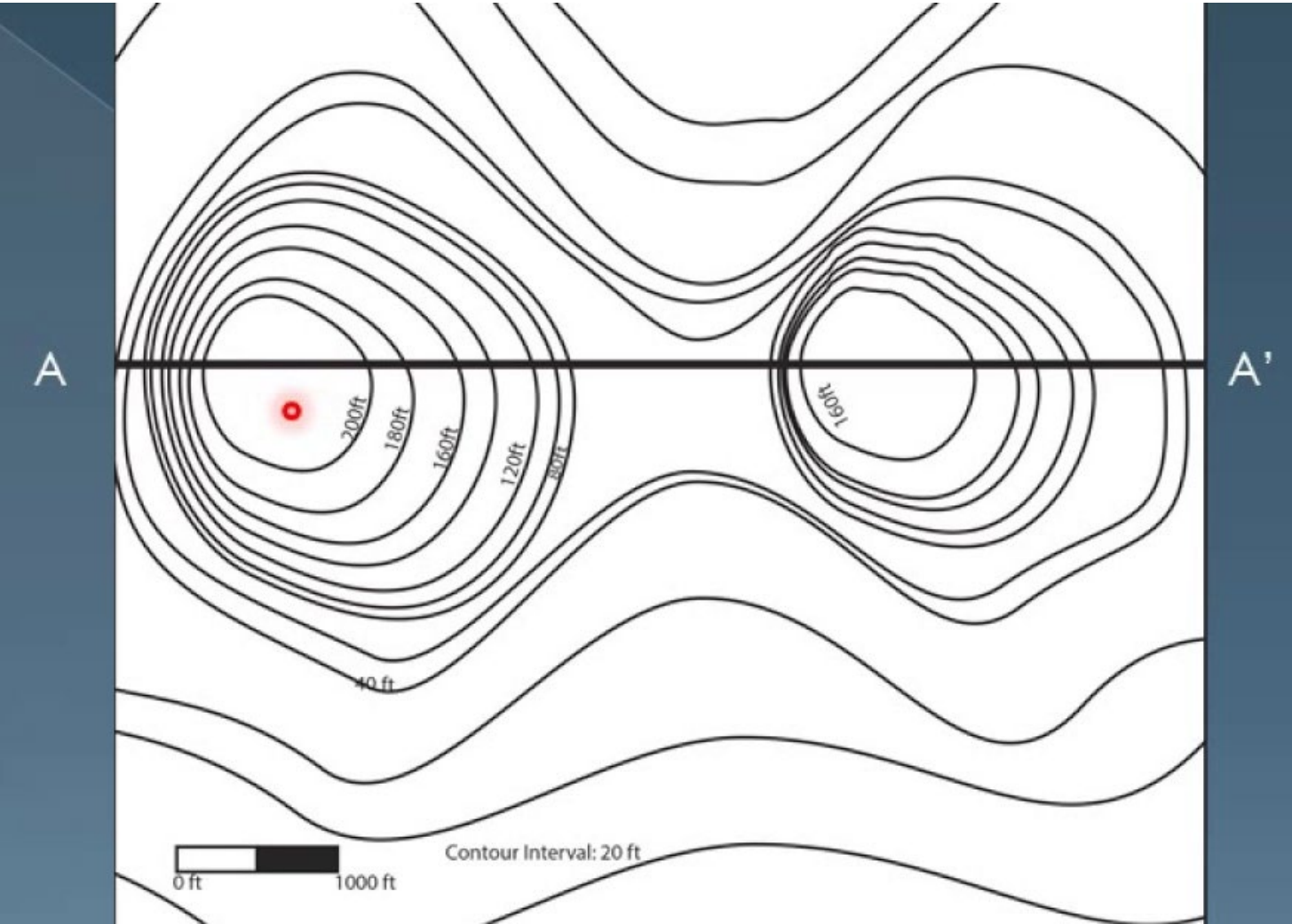


The background features a series of concentric, semi-transparent circles in shades of light blue and green, creating a layered effect. The overall color palette transitions from a light blue on the left to a light green on the right.

First class period

**BW:** Sketch a profile of this topographic map at cross section A-A'



## Quarter 1 Watershed Project

- Identify a local watershed
- Build a model the watershed
- Measure how water flows through it with your knowledge of motion

## Grading

- 9 Milestones
- v, la, ne
- Final gallery walk and reflection (1 month out). Bring snacks

## Watershed









# *Agenda for today*

## **Milestone 1 (Due Day 1)**

- Identify a watershed that you would like to study. Use google earth and document coordinates in notebook. Check in with teacher for credit.

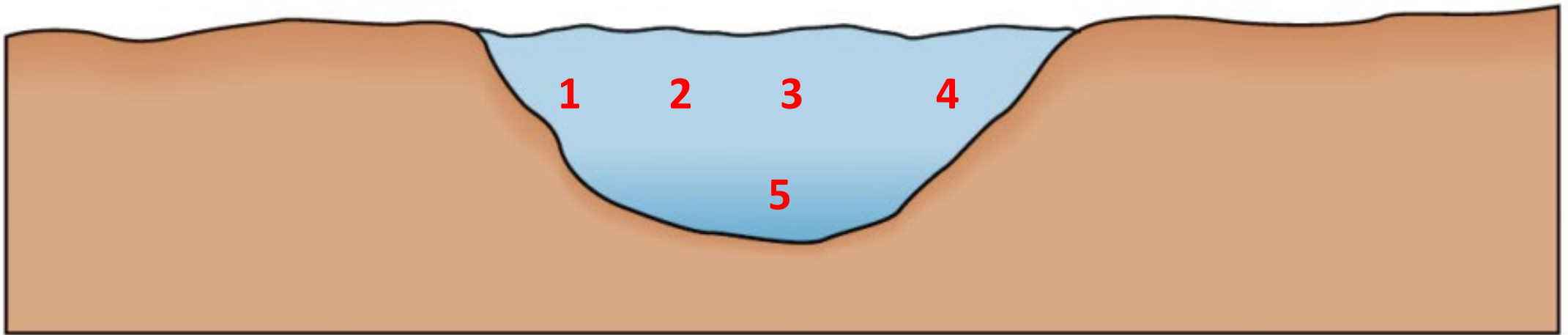
## **Milestone 2 (Due Day 1)**

- Decide division of labor in your groups. Check in with teacher for credit

## **Milestone 3 (Due Day 2 or 3)**

- Bring materials (i.e. cardboard) for your model.

**BW:** Where along this slice of a river do you think the speed of water would be lowest? Why?





# Kochenderfer Method for Learning New Words

<p>Vocab</p> <h2>Flow rate</h2>	<p>Definition</p> <p><i>The volume of fluid per every second the fluid is travelling through the cross-section of a moving body of water.</i></p>
<p>In own words</p>	<p>Drawing/Example</p>

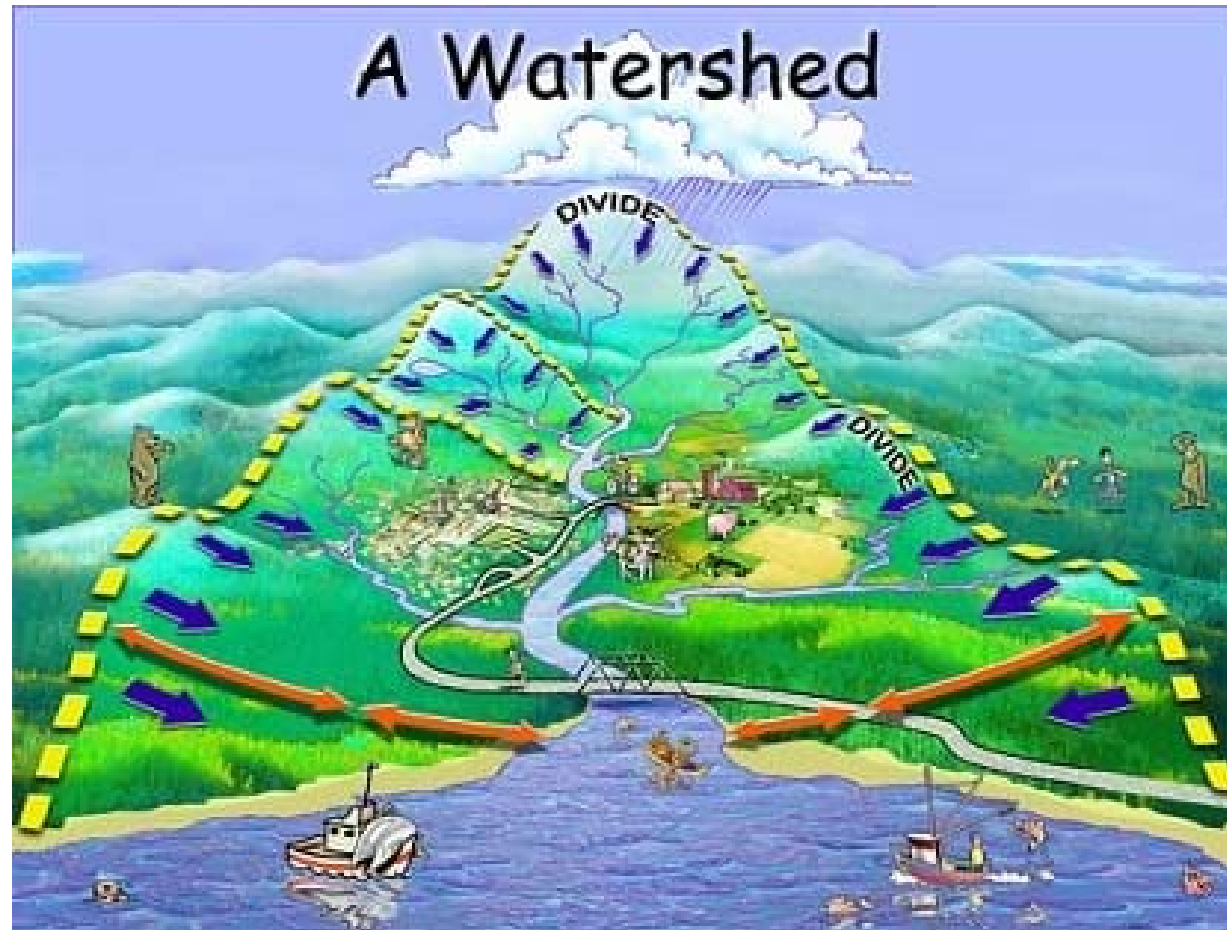
# Kochenderfer Method for Learning New Words

<p>Vocab</p> <h1>Friction</h1>	<p>Definition</p> <p><i>A force that occurs when one object rubs against something else. It always acts in a direction to oppose motion.</i></p>
<p>In own words</p>	<p>Drawing/Example</p>

# Kochenderfer Method for Learning New Words

<p>Vocab</p> <p><b>Cross section</b></p>	<p>Definition</p> <p><i>A surface or shape that is exposed by making a straight cut through something.</i></p>
<p>In own words</p>	<p>Drawing/Example</p>

**BW:** Write a list of what needs to be done today. Do you think that this list is realistic? How much time will you dedicate to each task? Note length of class period.



**BW:** 30 minutes into our first class next week, I will be doing a completeness check for Milestone 4 (skeleton of model). Make a list of what needs to be completed before then.



Next class period

# *Agenda for today*

## **Milestone 3** (Due Day 2 or 3)

- Bring materials (i.e. cardboard) for your model.
- Check in with teacher for credit.

## **Milestone 4** (Due end of week 1)

- Complete a skeleton of your model (roughly complete)
- Check in with teacher for credit.

# Summarize

- For 3 minutes, discuss what you completed today. Write a list in your notebook
- For 2 minutes, make a plan for next class, write this in your notebook.





## Quarter 1 Watershed Project

- Identify a local watershed
- Build a model the watershed
- Measure how water flows through it with your knowledge of motion

## Grading

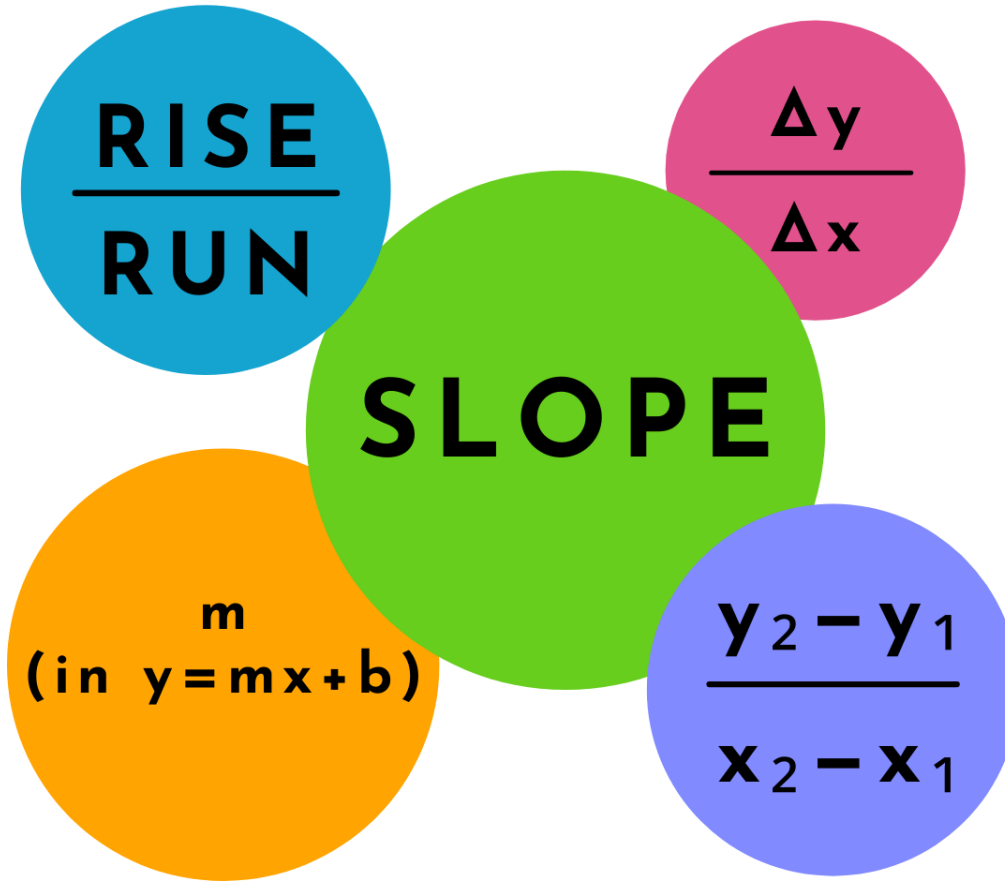
- 9 Milestones
- v, la, ne
- Final gallery walk and reflection 10/4 and 10/5. Bring snacks

## Watershed



**BW:** Write the definition of a rate in your own words.  
Use complete sentence(s). What goes in the numerator of a rate? What goes in the denominator?

## RATE OF CHANGE



Next class period

# *Agenda for today*

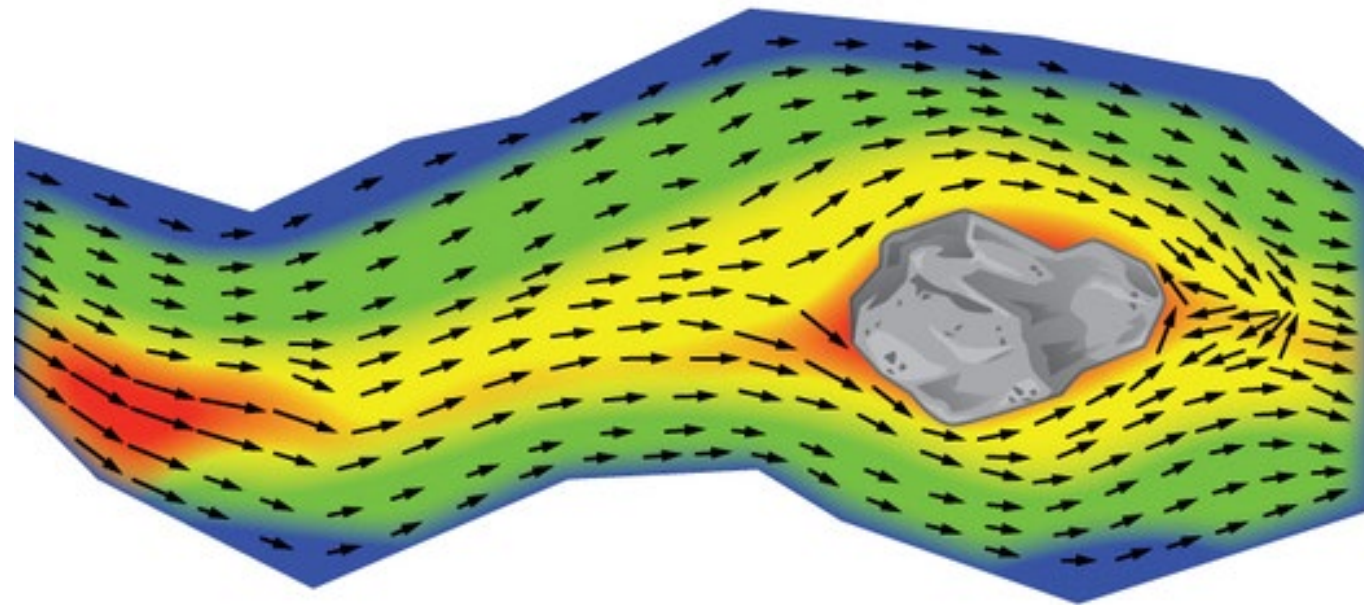
## **Milestone 4** (Due 30 mins into class)

- Complete a skeleton of your model (roughly complete)
- Check in with teacher for credit.

## **Milestone 5** (Due end of class)

- Model is coated with water resistant material
- Scale for model established
- No more work on model required

**BW:** Write one thing that you observe and two questions that you have about the following figure. Lastly, does this figure represent data? Write in complete sentences.



Next class period

# *Agenda for today*

## **Milestone 6** (Due at end of class)

- Write 4 testable questions about the motion of water through your model in your notebook individually
- Collaborate with your group to decide on one question you will answer. Circle the question in your notebook
- *Evidence of completion must be in your notebook for credit*

## **Milestone 7** (Due at beginning of next class)

- Begin testing your question
- For this milestone, you must have recorded numerical data that you can develop into a figure in milestone 8!

## Sample Questions

- How fast does water flow through the model?
- What is the most common path for water?
- Where does water tend to travel at any given point on the model?



**BW:** With your group, discuss the question relating to motion and water that you plan on answering. Collaboratively write a plan for how you will measure this. Remember, you must collect data and represent it in a figure (sort of like Dear Data project) for Milestone 8.

The background features a series of concentric, semi-transparent circles in shades of light blue and green, creating a ripple effect. The overall color palette transitions from a light blue on the left to a light green on the right.

Next class period

# *Agenda for today*

## **Milestone 7**

- Begin testing your question
- For this milestone, you must have recorded numerical data that you can develop into a figure in milestone 8!

## **Milestone 8 (Due before next class)**

- Represent the data that you collected in milestone 7 visually on a piece of paper which you will present next to your model.
- Look at other groups or Dear Data projects for inspiration

## **Milestone 9 (next class)**

Reflection



Next class period

## **Milestone 9**

Student Reflection

# Examples of student work

flow rate:  $\frac{4.61 \text{ sec}}{70 \text{ cm}}$   
range:

$V = 15.1843817787$   
cm per sec

Distance : 62 cm

Time : 2.01 sec

Velocity : 31



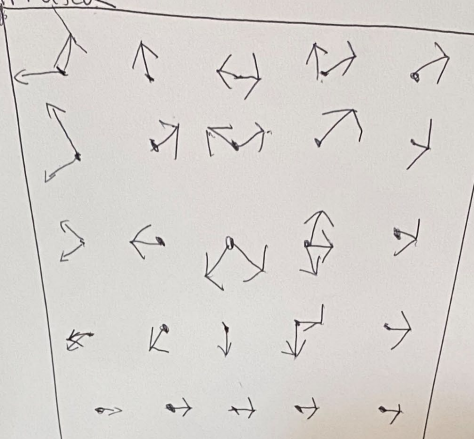
How water flows down a mountain

Sebastian Sanchez-Palome

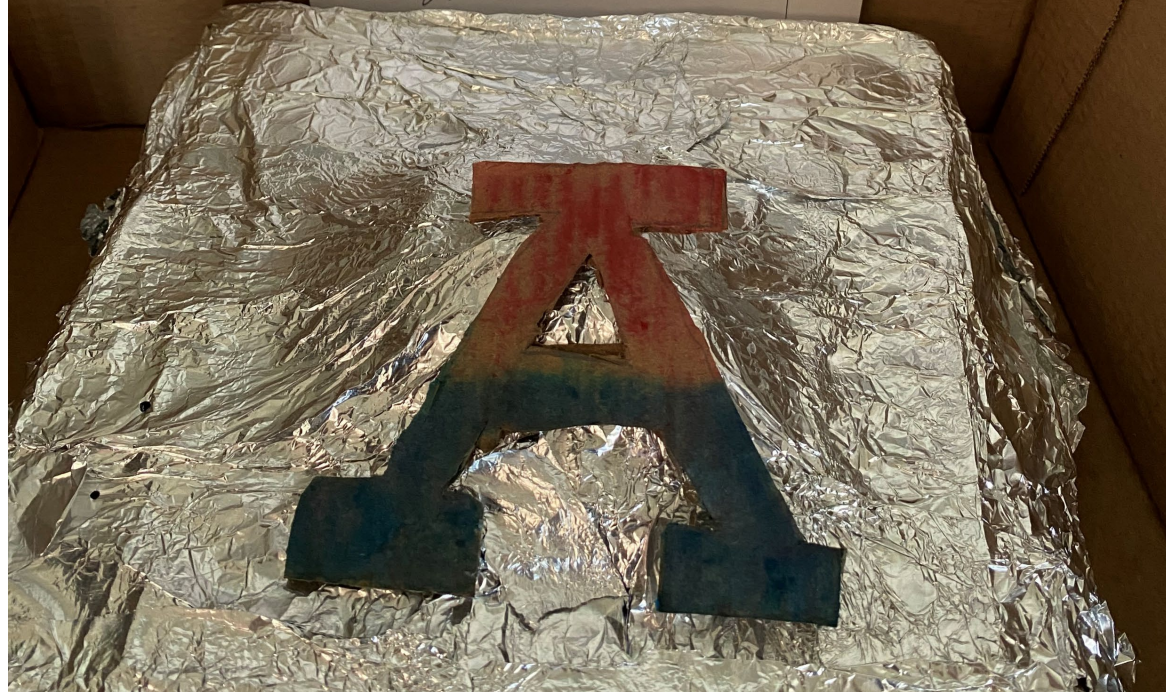
Fernando Carrasco

Nehemiah Maldonado

Martin Rocha-Gilvalva



~~The dots in the grid represent the seats of the mountain which way it went~~



measure from start to finish

65cm

$$(65\text{cm}) / (135\text{s}) =$$

0.05m/s