



# Introducing Interactivity into the Classroom

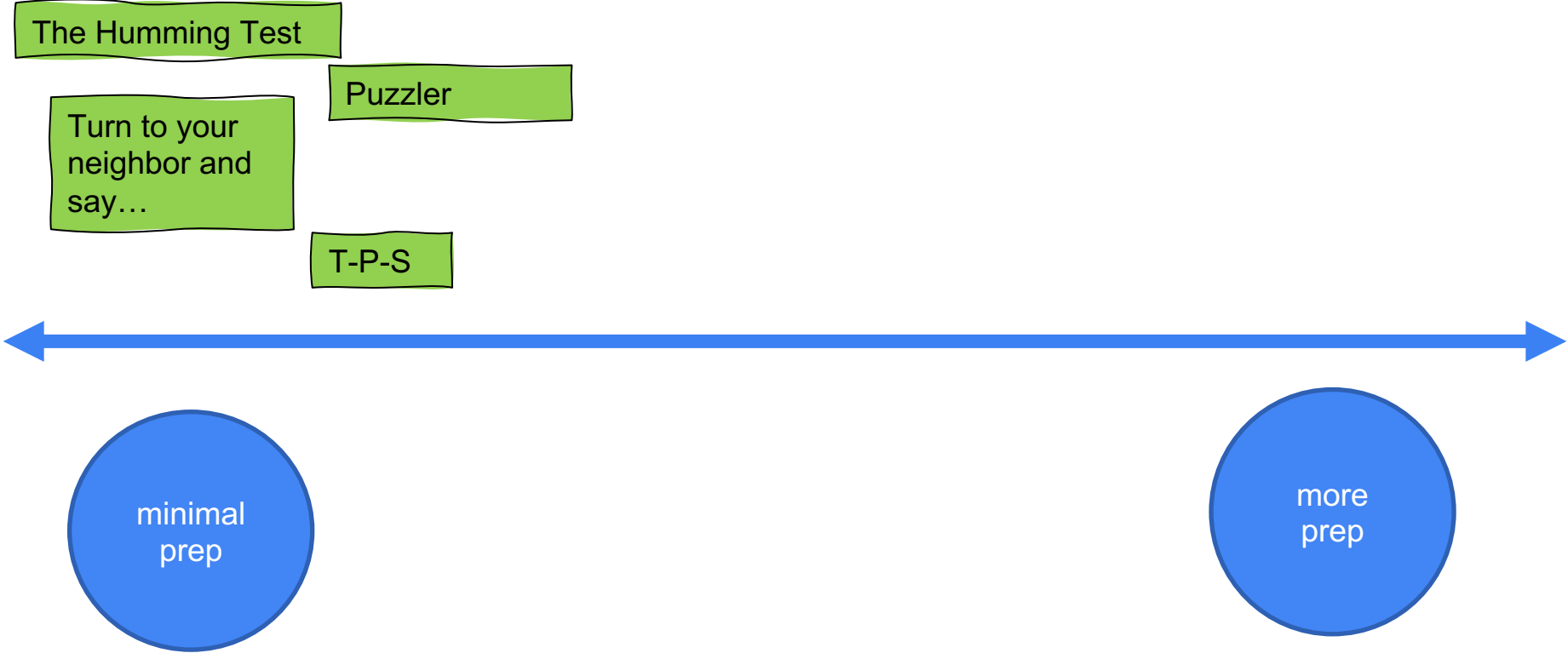
Irina Dubinina ([idubinin@brandeis.edu](mailto:idubinin@brandeis.edu))

Marty Samuels ([msamuels@brandeis.edu](mailto:msamuels@brandeis.edu))

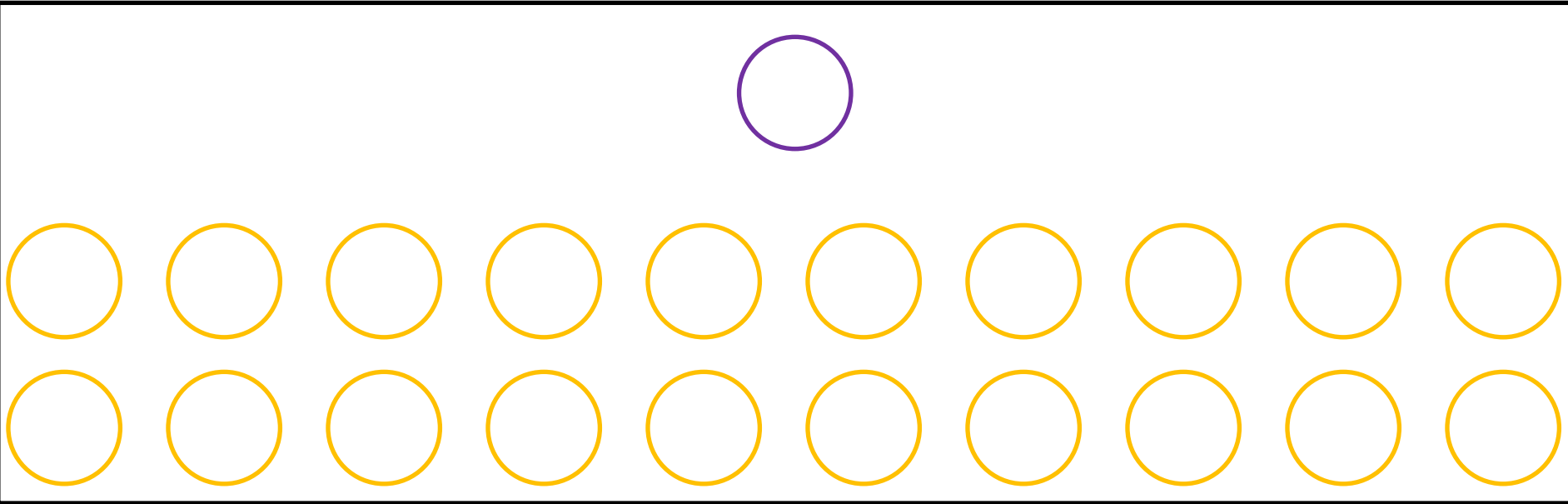
Dan Perlman ([perlman@brandeis.edu](mailto:perlman@brandeis.edu))

October 28, 2022  
Center for Teaching  
and Learning

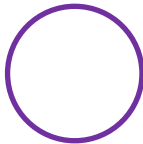
# Interactivity → increased small group work



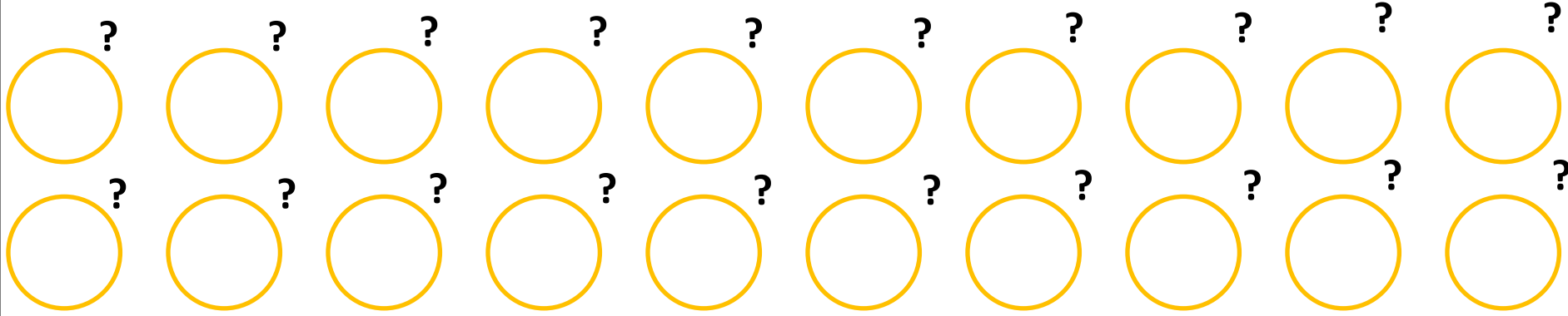
Consider the following scenario: A Teacher is speaking and asks a question of the class. First the Students think-pair-share and then the teacher calls on several Students.



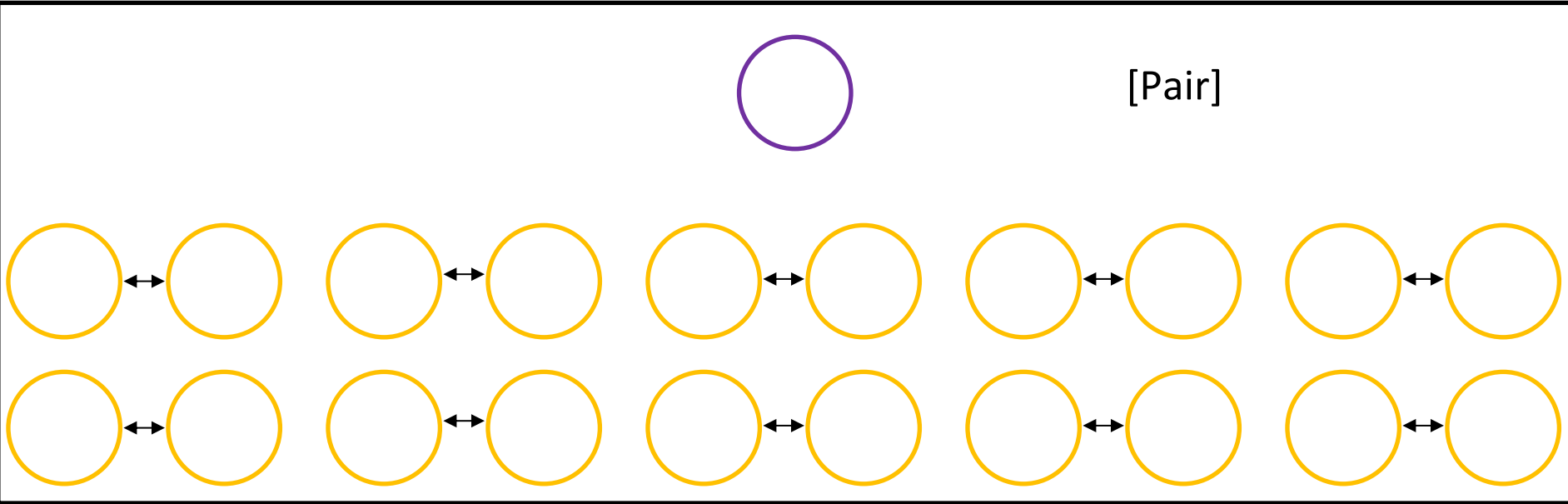
Consider the following scenario: A Teacher is speaking and asks a question of the class. First the Students think-pair-share and then the teacher calls on several Students.



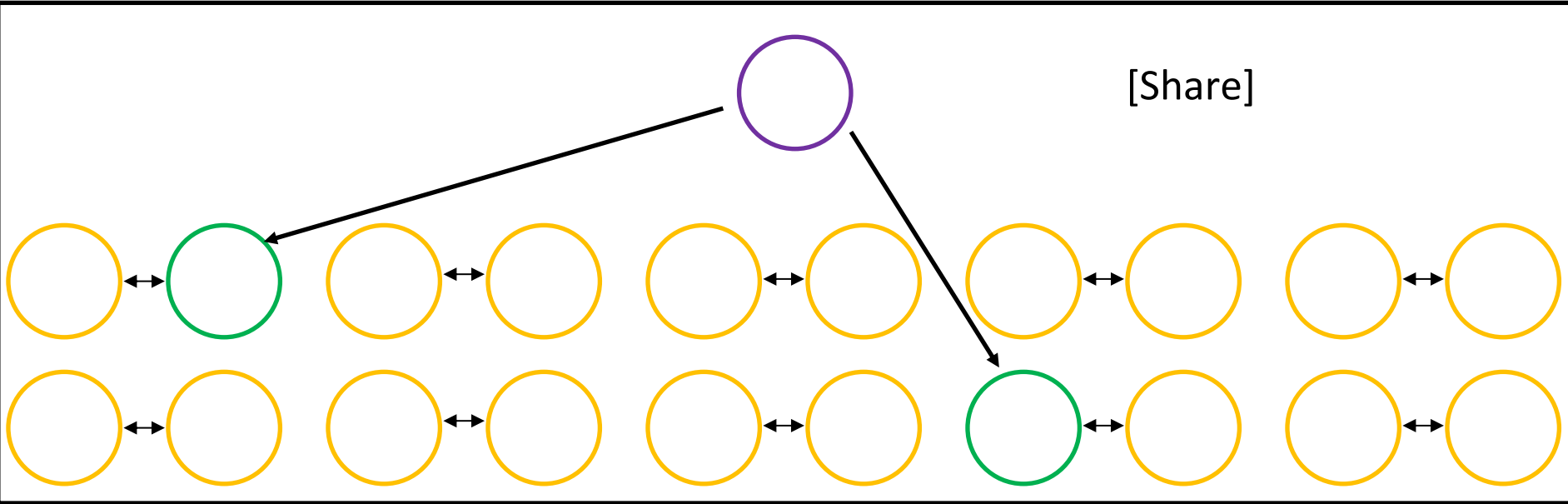
[Think]



Consider the following scenario: A Teacher is speaking and asks a question of the class. First the Students think-pair-share and then the teacher calls on several Students.



Consider the following scenario: A Teacher is speaking and asks a question of the class. First the Students think-pair-share and then the teacher calls on several Students.



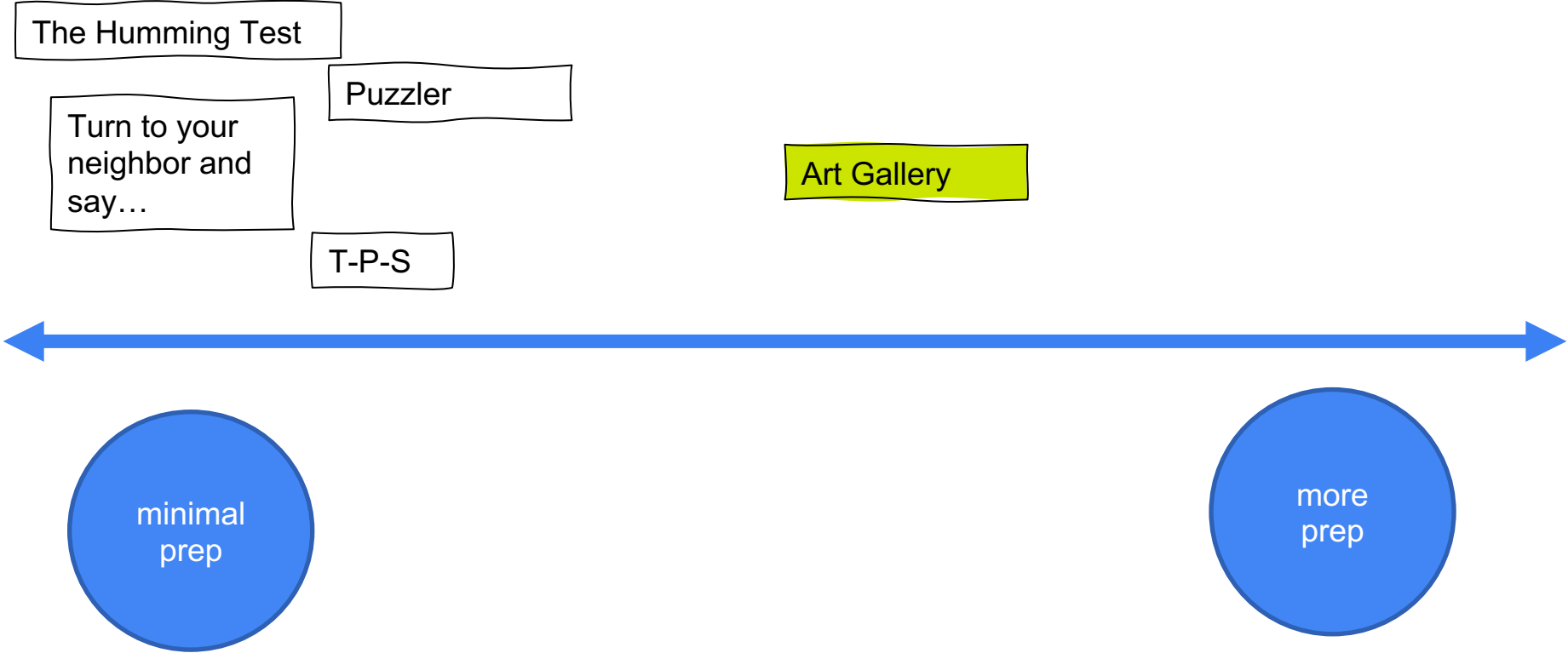
# Small group work: best practices

Think through these decisions before doing the activity:

- How many people in a group? (depends on the size of the class, levels of students, subject matter, nature of the task)
- Would students need some guiding questions to complete the task in a group?
- Should group members be assigned roles (e.g., note taker, reporter)?
- Should students report out or not? How will they report out?
- Should there be some kind of “final” product? And should this product be in a written or oral form?



# Interactivity → increased small group work



# You are invited to an evening at our new Art Gallery!

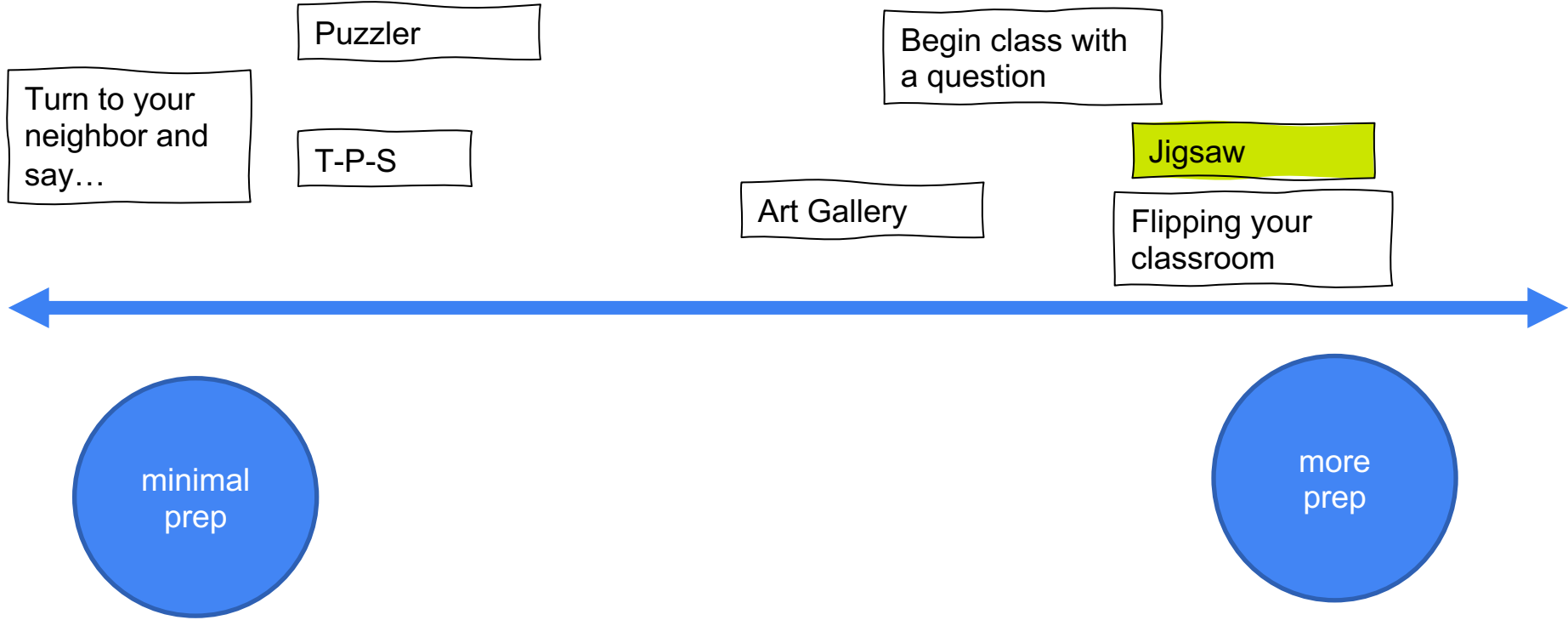
- Find a buddy
- Walk around the gallery: you need to visit at least 2 paintings
  - Discuss what you see on the paintings: describe objects and people (what do they talk about? What do they feel? What mood is depicted?)
  - Hypothesize when and where the events may be happening
- You have 4 minutes

Which painting spoke to you? Why?

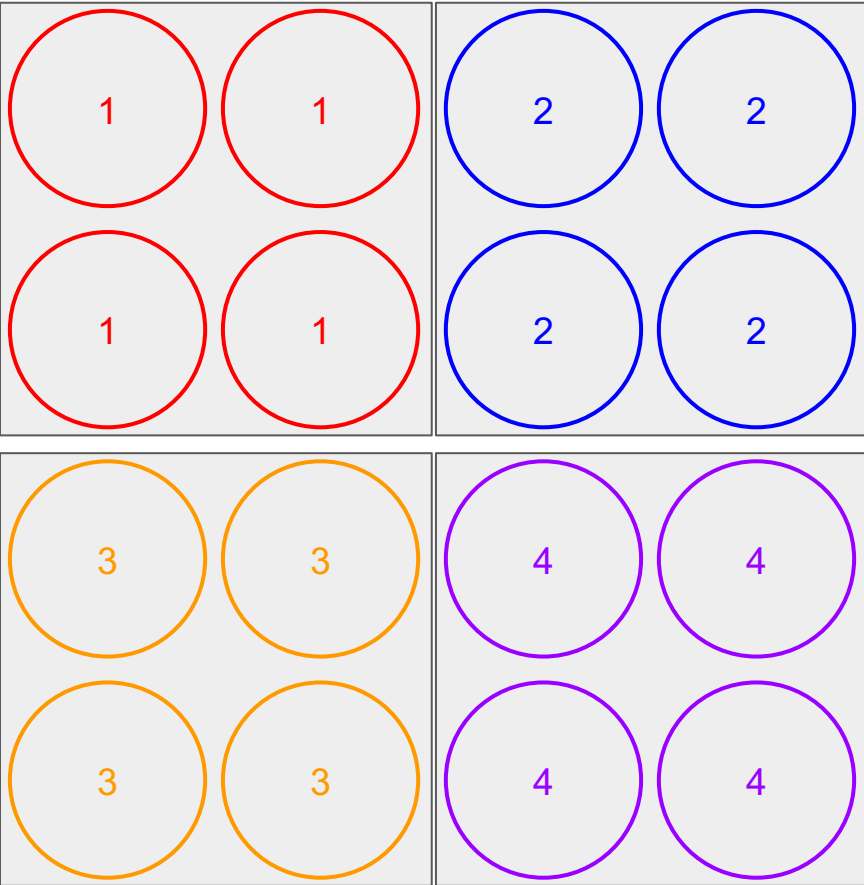
What do we (students and teachers) get from this activity?

How can it be used in non-language classes?

# Interactivity → increased small group work

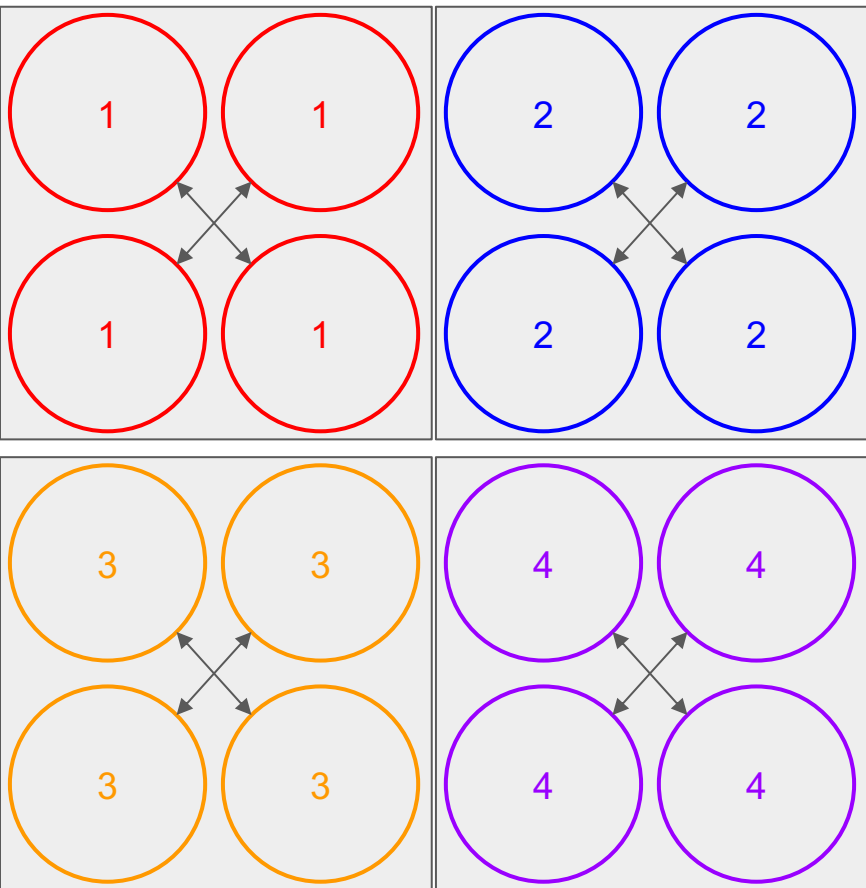


## Stage 1: Expert groups



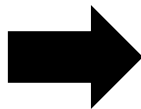
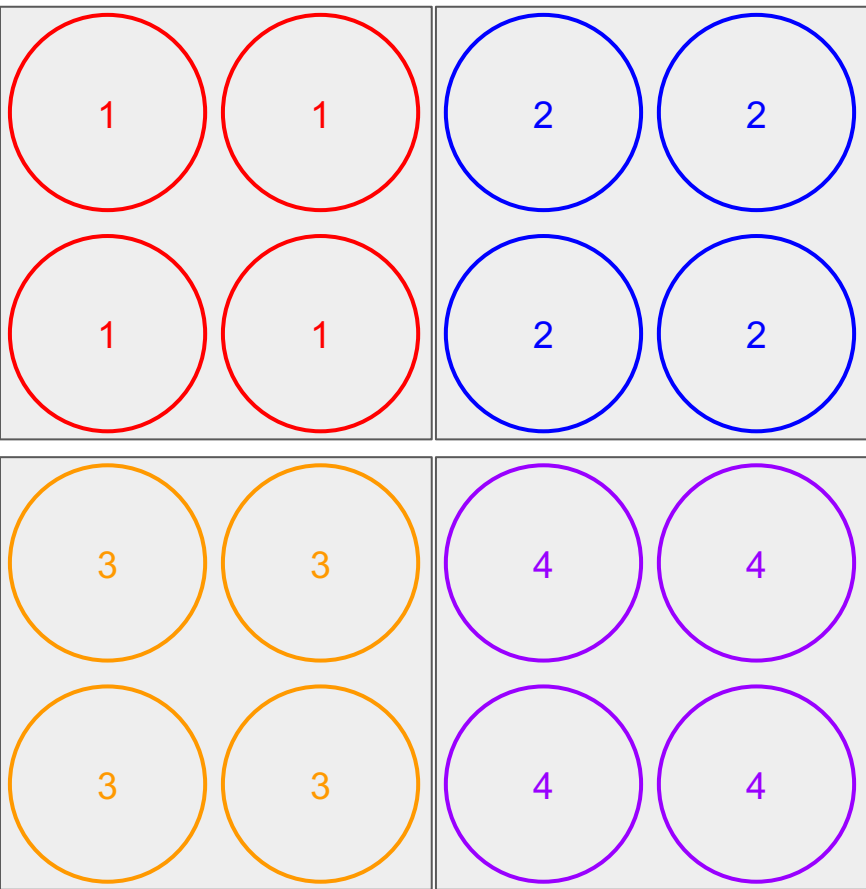
## Stage 2: Teaching groups

Stage 1: Expert groups



Stage 2: Teaching groups

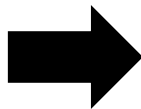
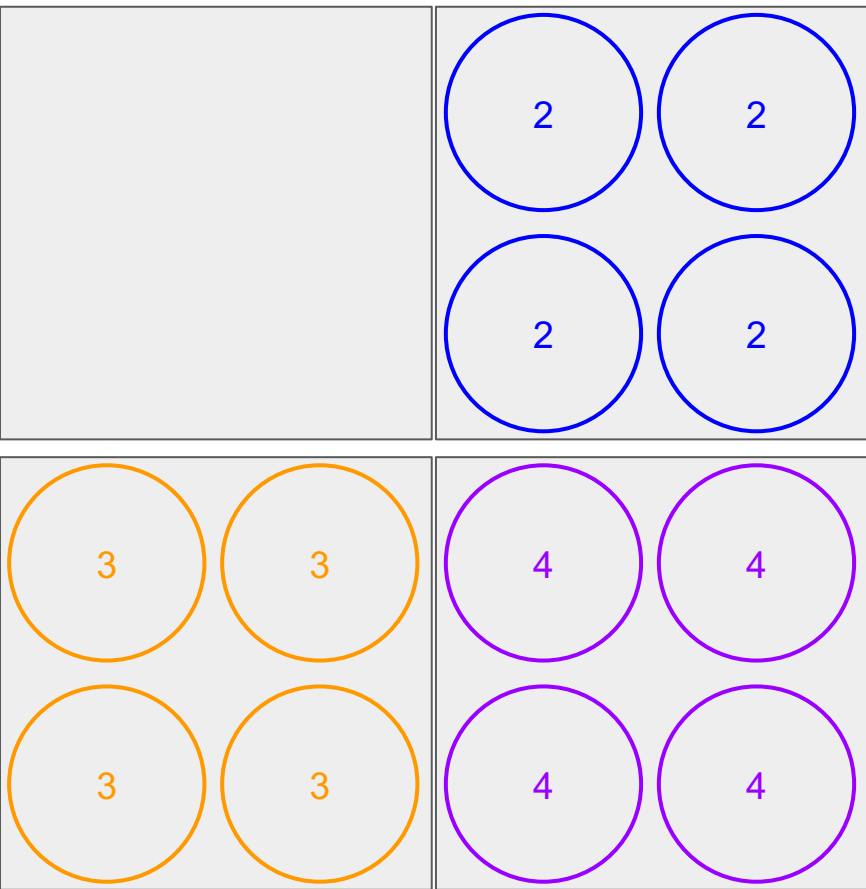
Stage 1: Expert groups



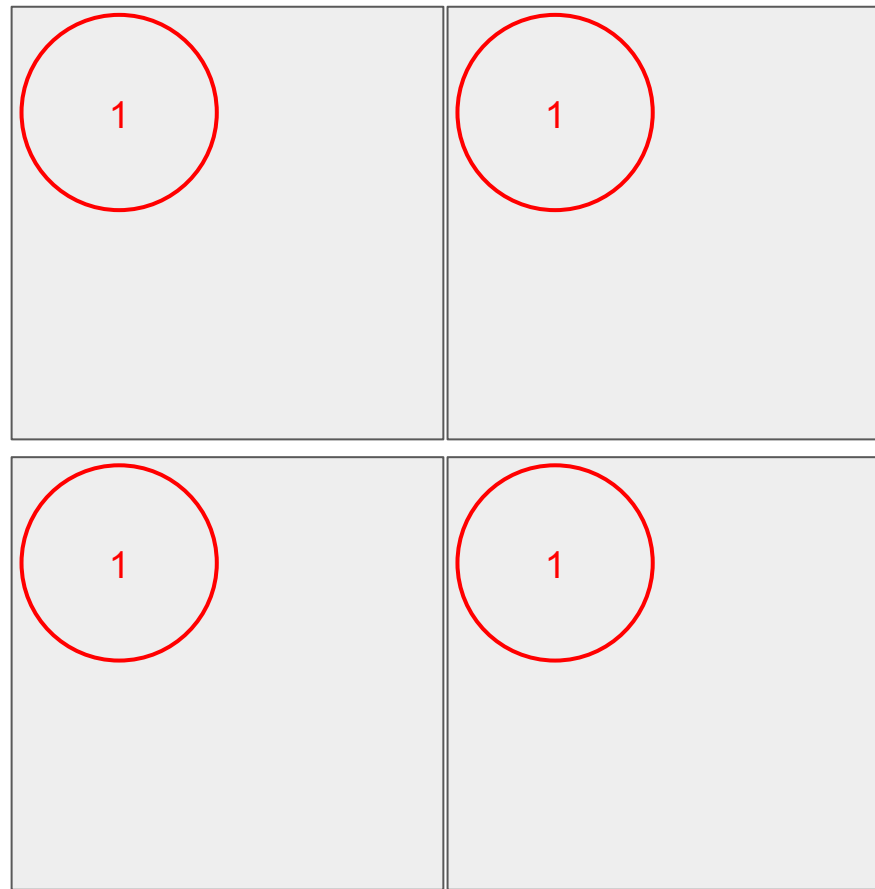
Stage 2: Teaching groups



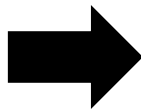
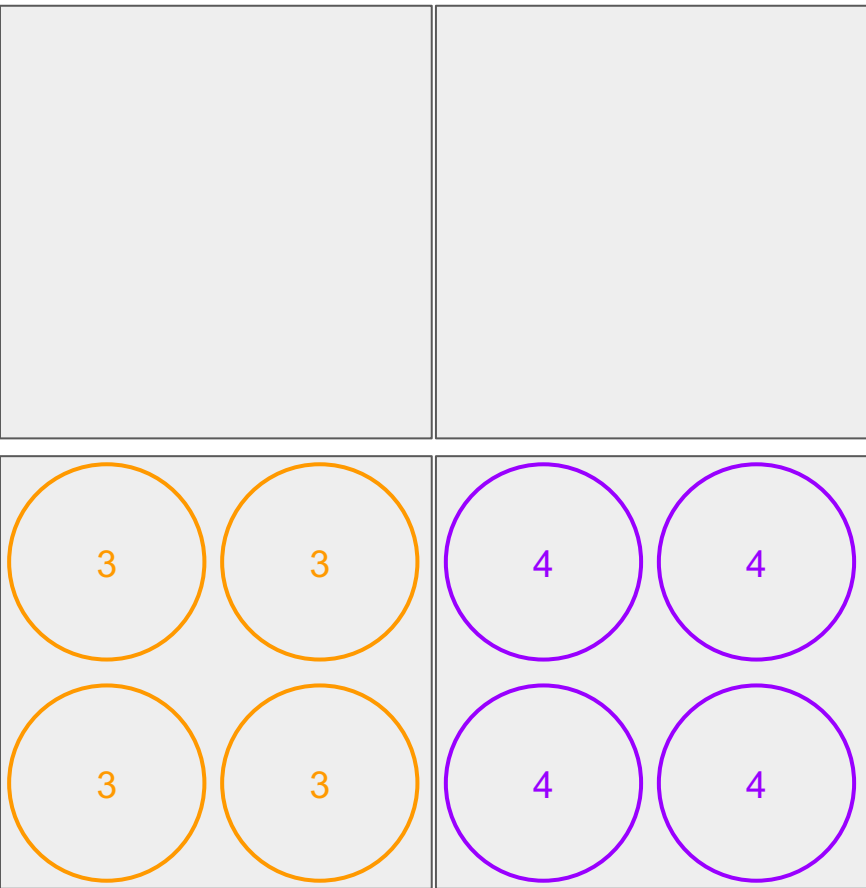
Stage 1: Expert groups



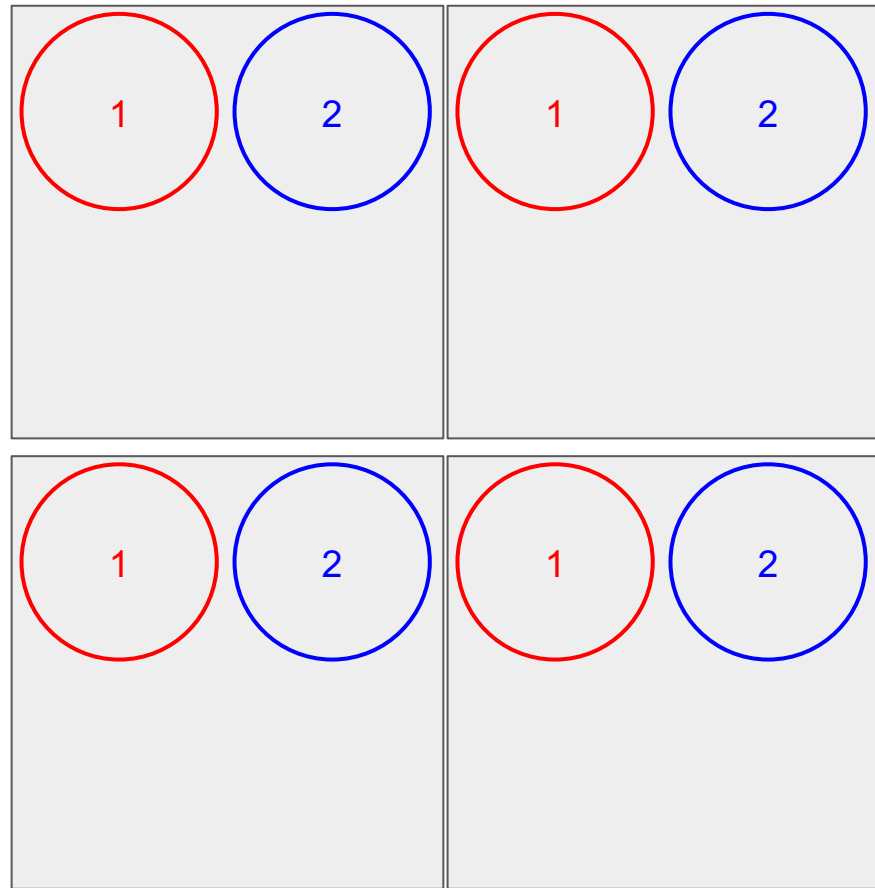
Stage 2: Teaching groups



Stage 1: Expert groups

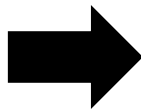
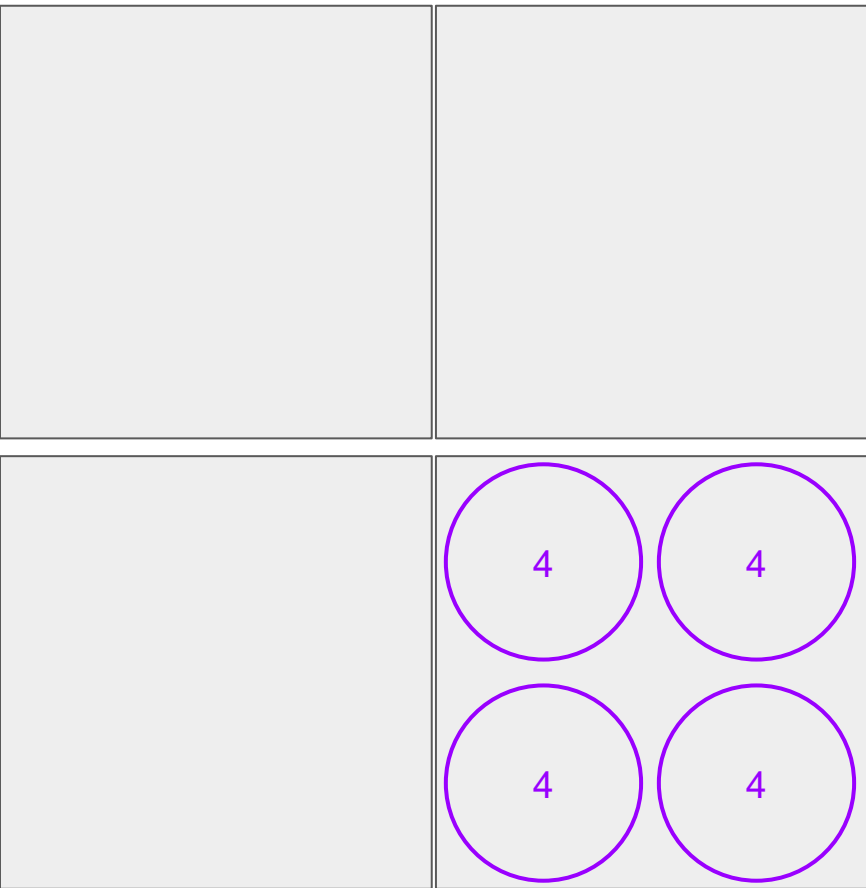


Stage 2: Teaching groups

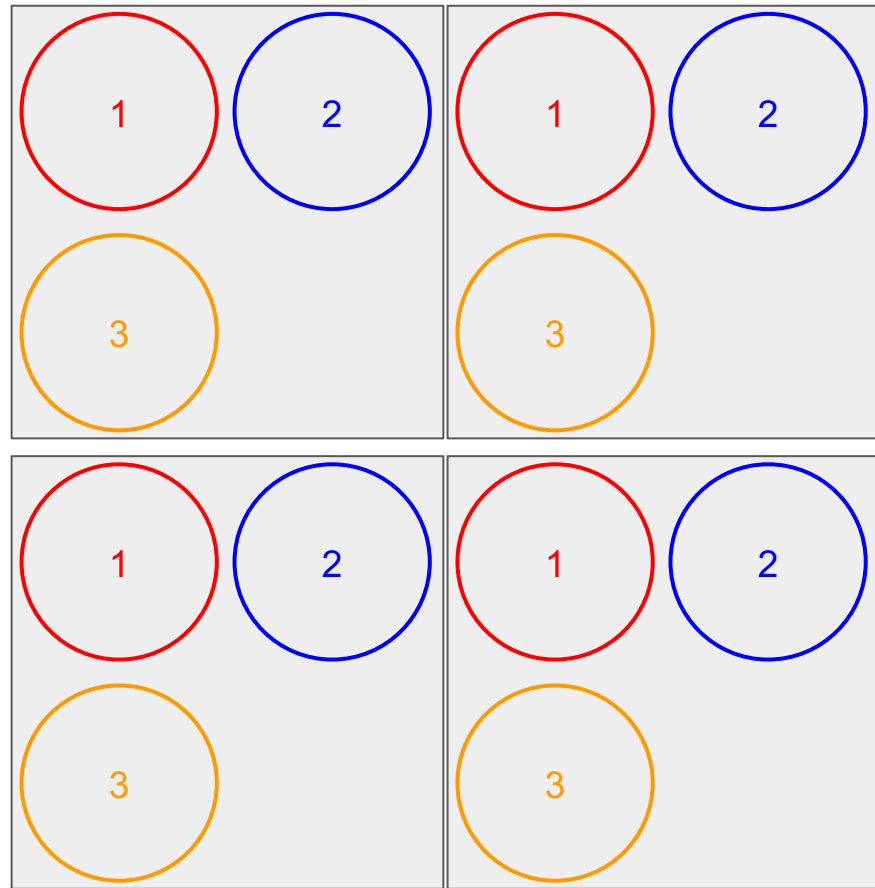




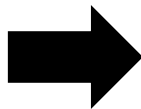
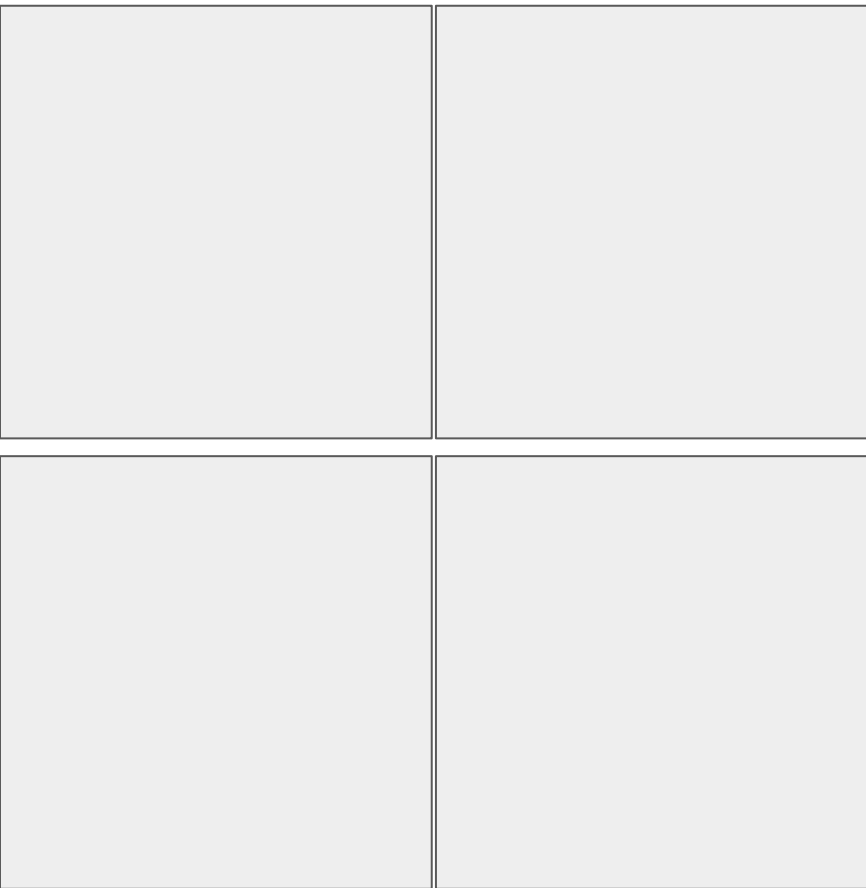
Stage 1: Expert groups



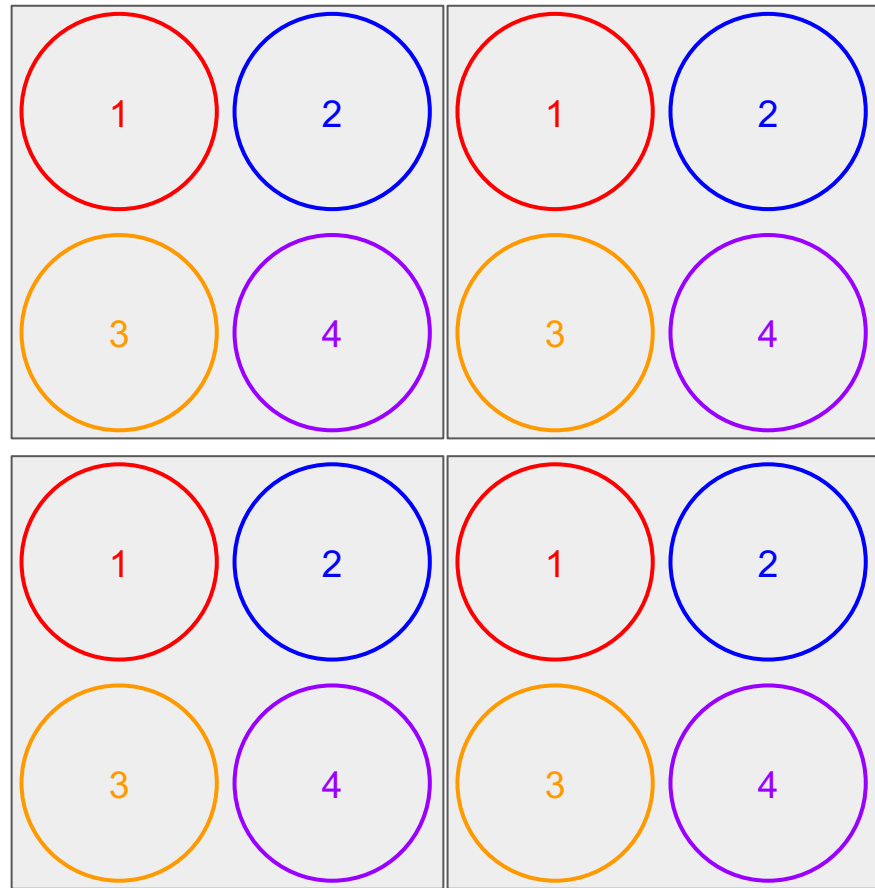
Stage 2: Teaching groups



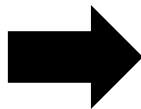
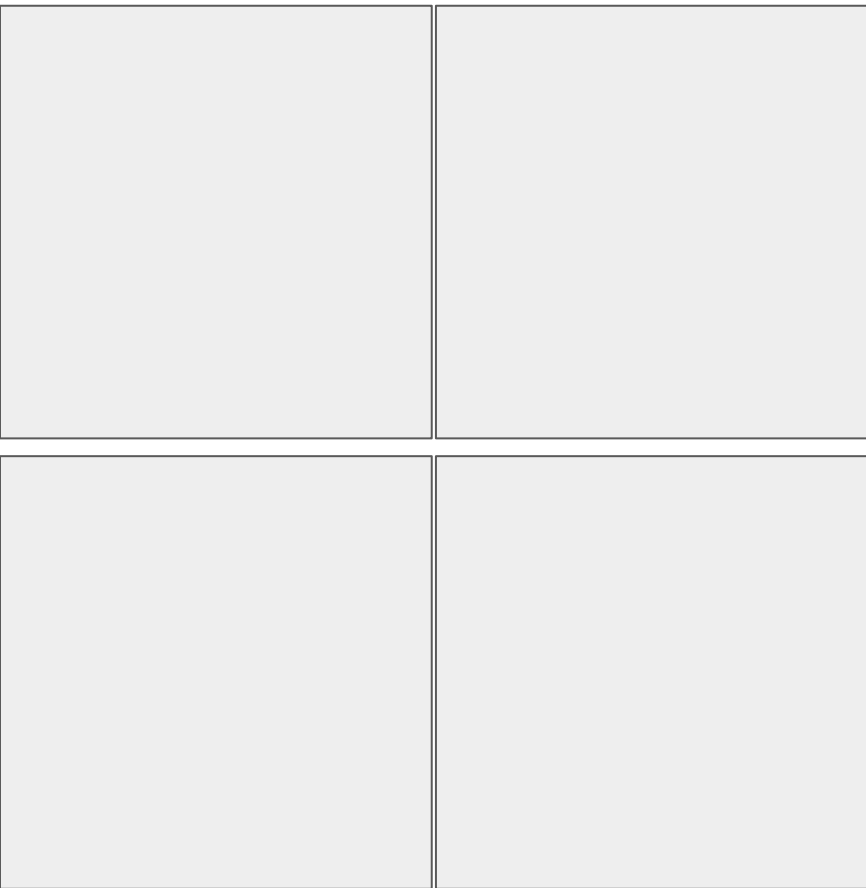
Stage 1: Expert groups



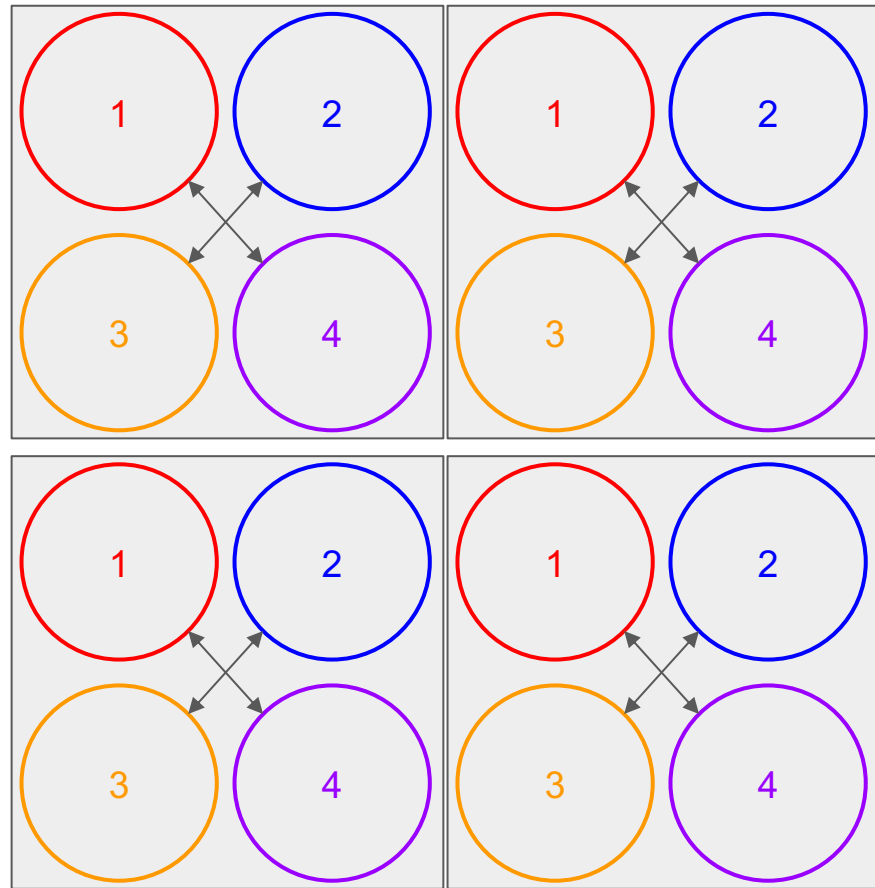
Stage 2: Teaching groups



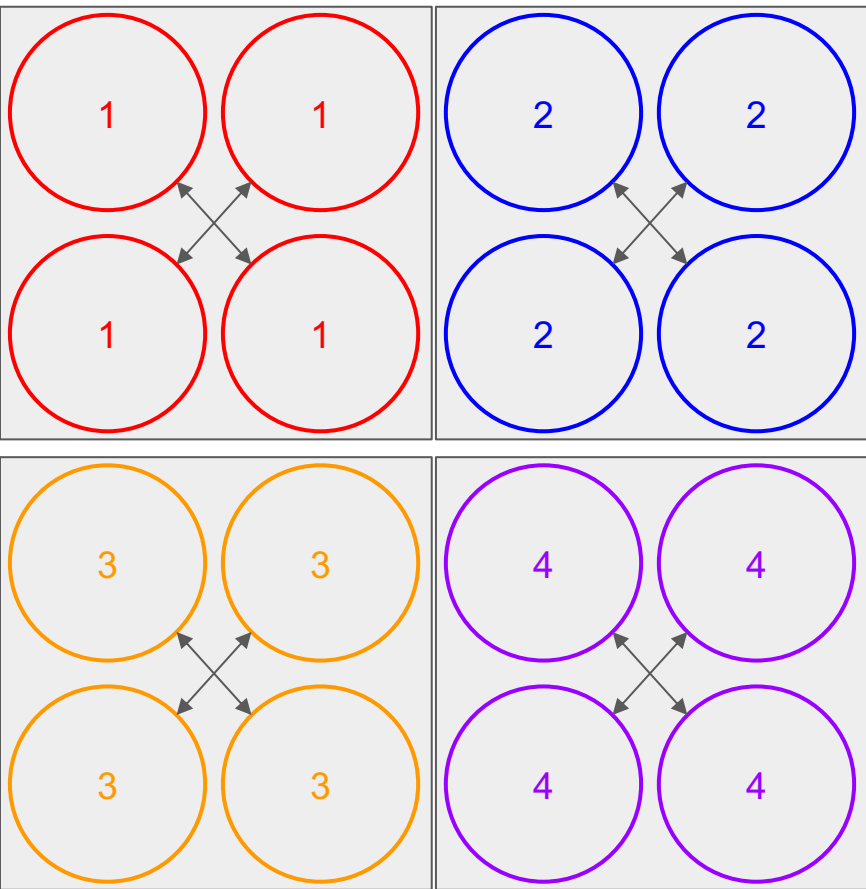
Stage 1: Expert groups



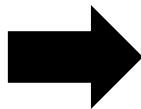
Stage 2: Teaching groups



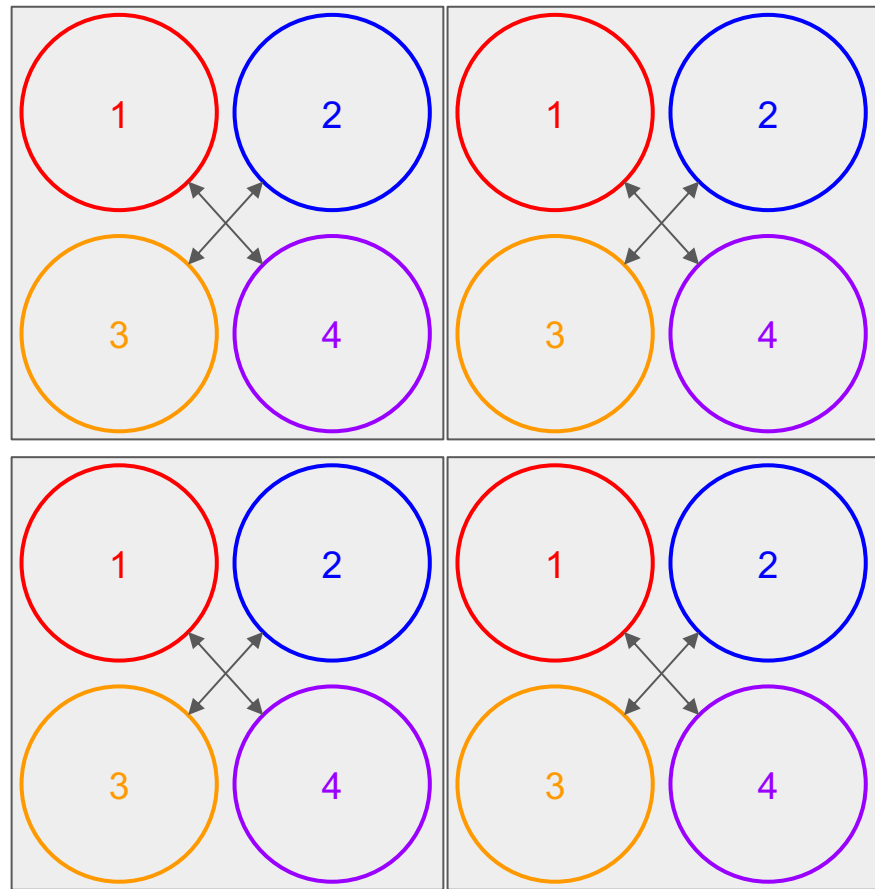
Stage 1: Expert groups



(20 – 30 min)

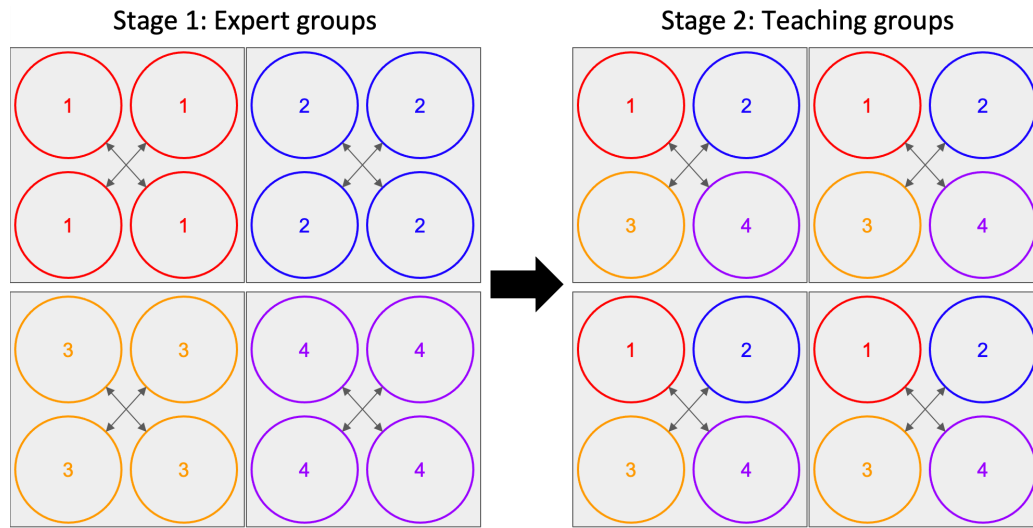


Stage 2: Teaching groups



(20 – 30 min)

**For example  
(from a  
biology class):**

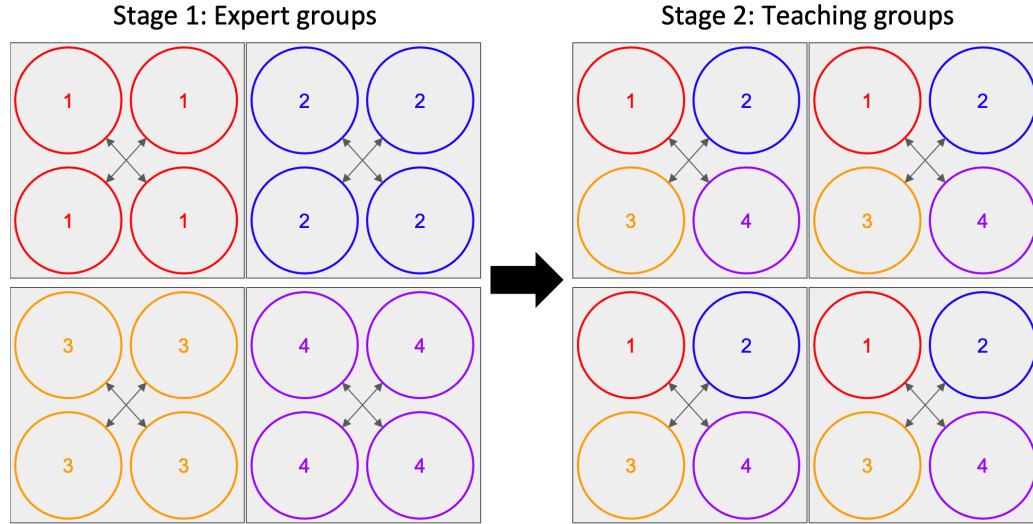


Each group asked to study a different genetic disease:

- What are its causes?
- How is it treated?
- How does it appear in a family tree?

Each group asked:

- to teach each other about their diseases
- compare and contrast each disease's causes and treatments
- Identify trends between the causes of diseases and their how they're treated



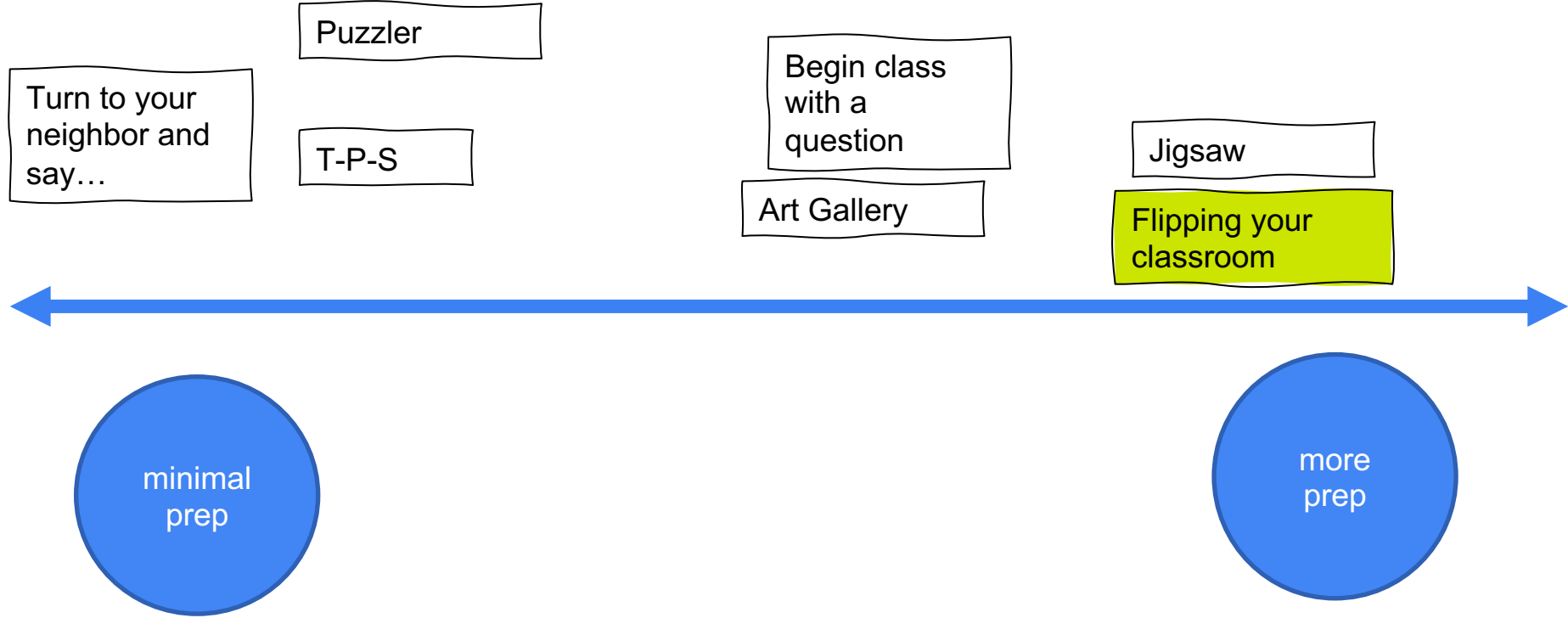
Working with your neighbor(s):

- a. Pick one of the options for using a jigsaw below
- b. Spend ~ 5 minutes thinking about what you would ask students to do during stage 1 and stage 2.

Jigsaw assignment options:

- i. (Literature class) Compare and contrast 4 poems
- ii. (Literature class) Analyze a text through a close reading of 4 key scenes
- iii. (Language class) Reconstruct a story that is broken into 4 pieces
- iv. (History class) Build a timeline of 4 eras
- v. (Law class) Analyze how jurisprudence evolved over 4 rulings
- vi. (Chemistry class) Compare and contrast 4 chemical reactions
- vii. Or pick an example from your own course!

# Interactivity → increased small group work



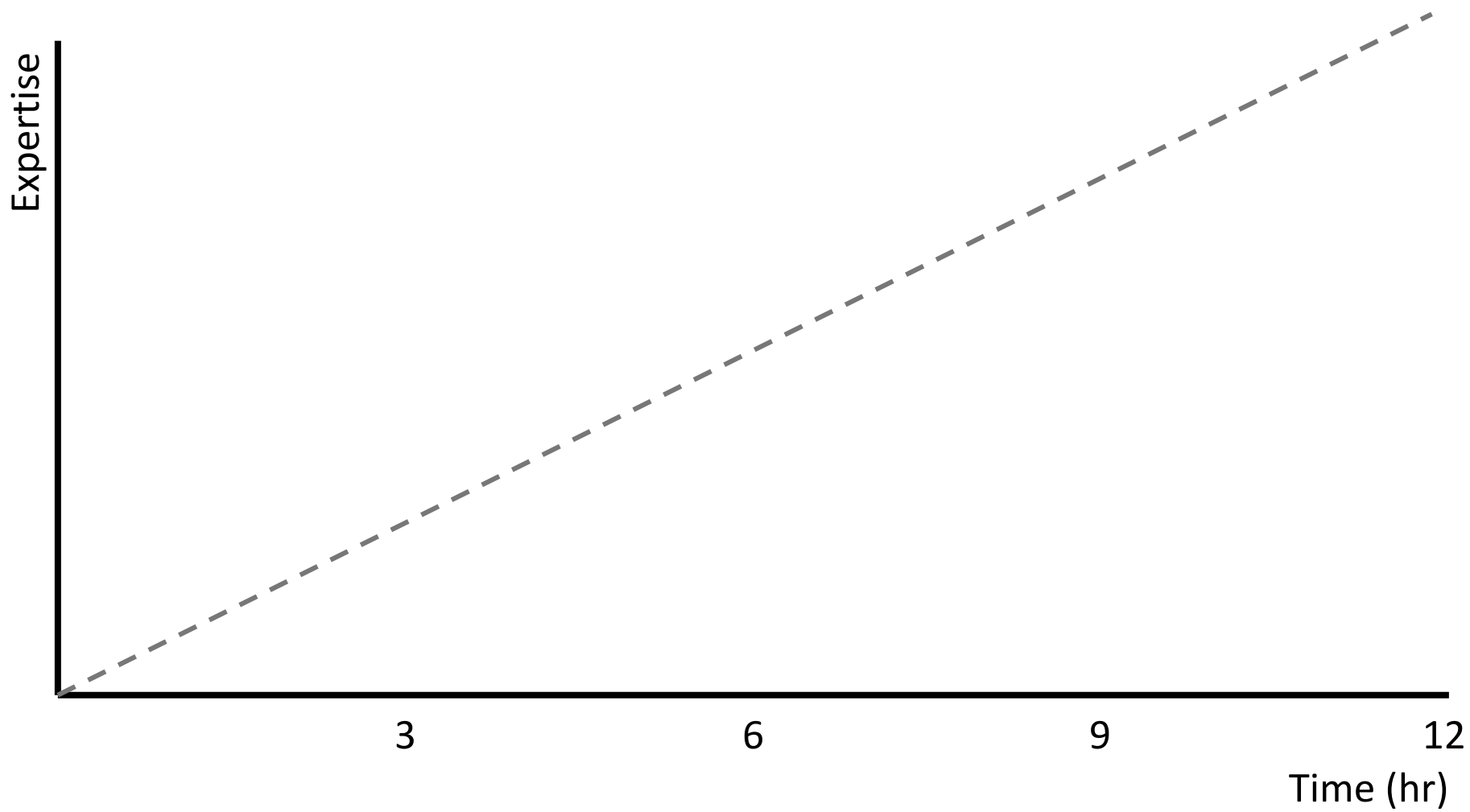
Expertise

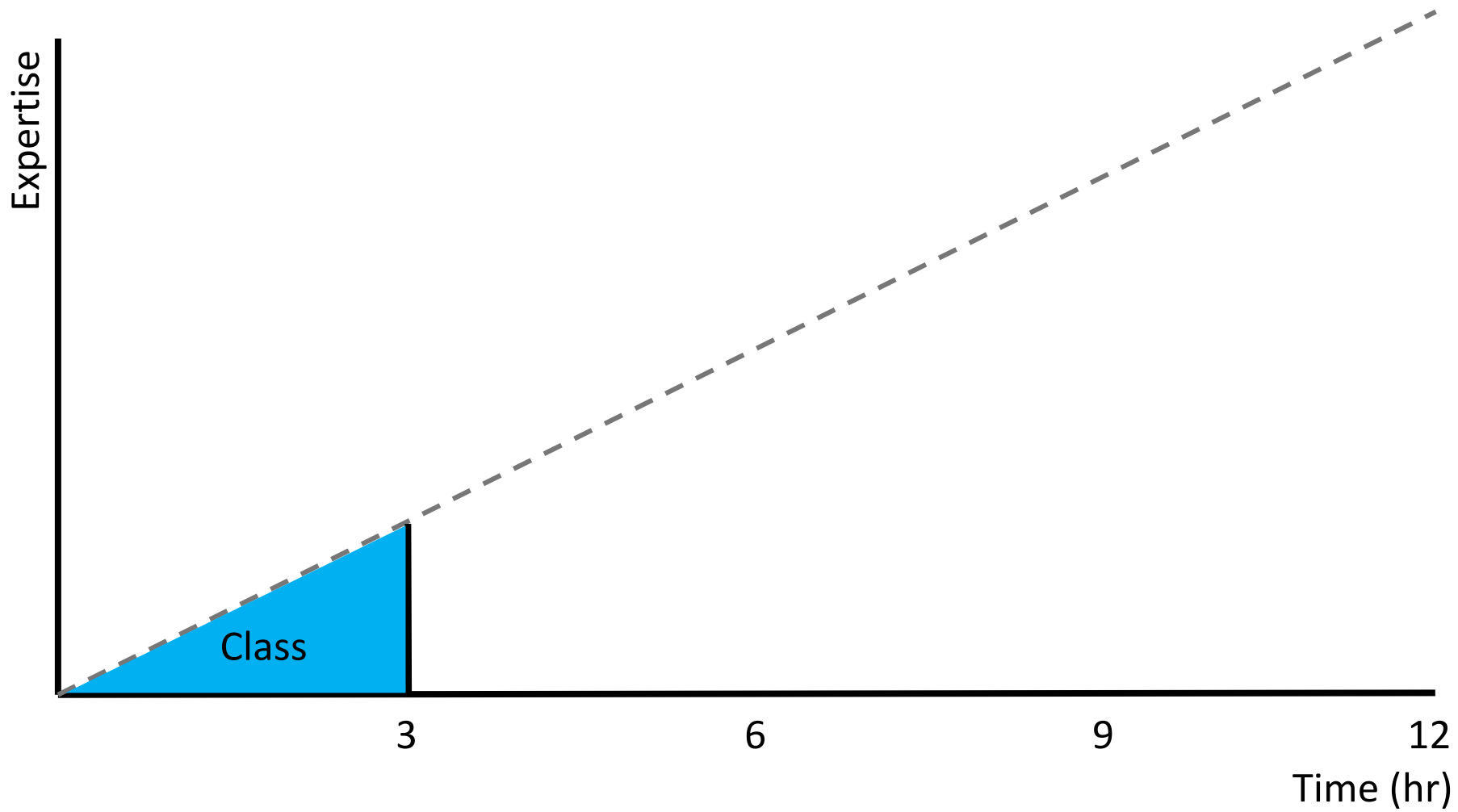
A blank coordinate system with a vertical y-axis labeled 'Expertise' and a horizontal x-axis labeled 'Time (hr)'. The axes are represented by solid black lines forming an L-shape. The y-axis is on the left, and the x-axis is at the bottom. The origin is at the bottom-left corner.

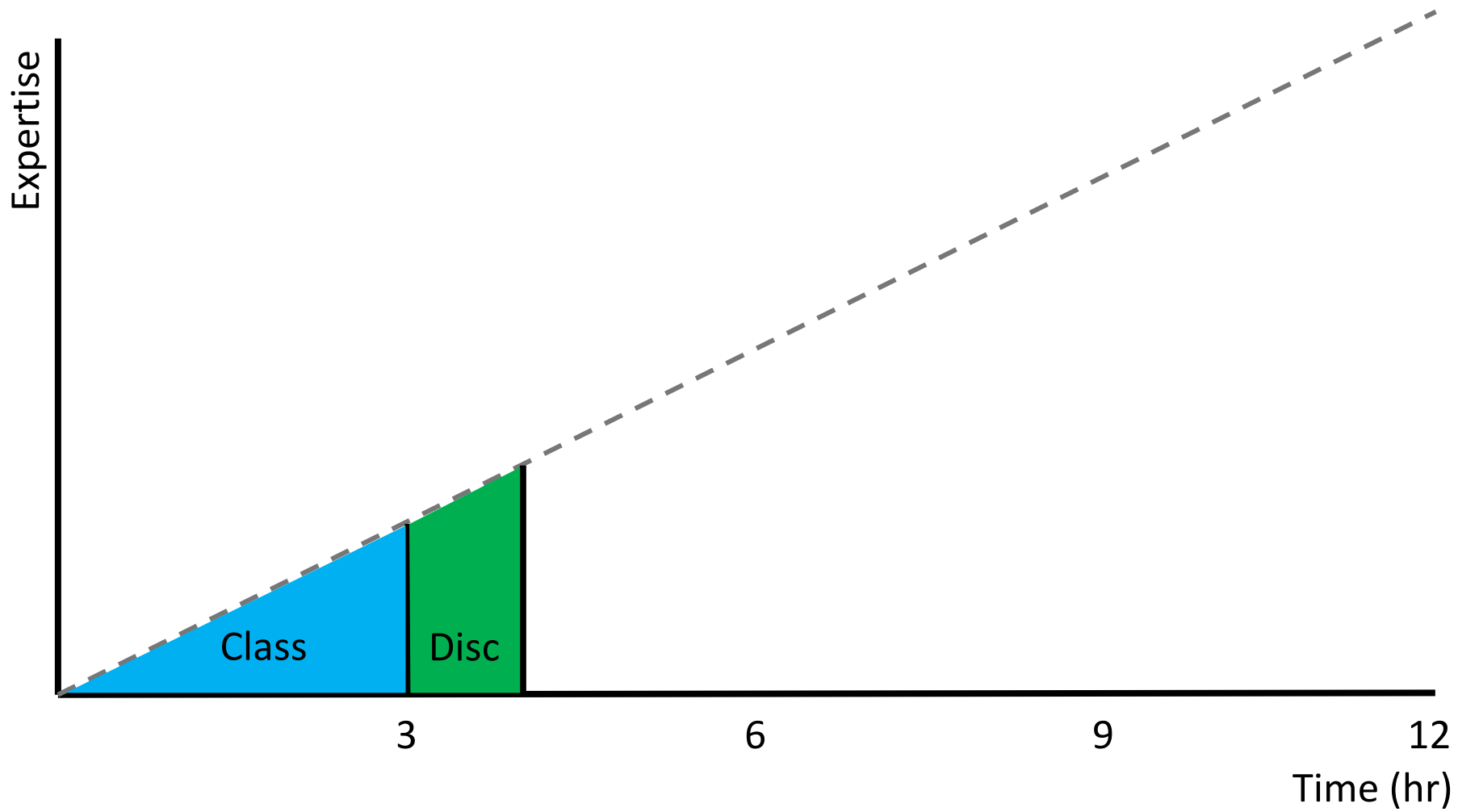
Time (hr)

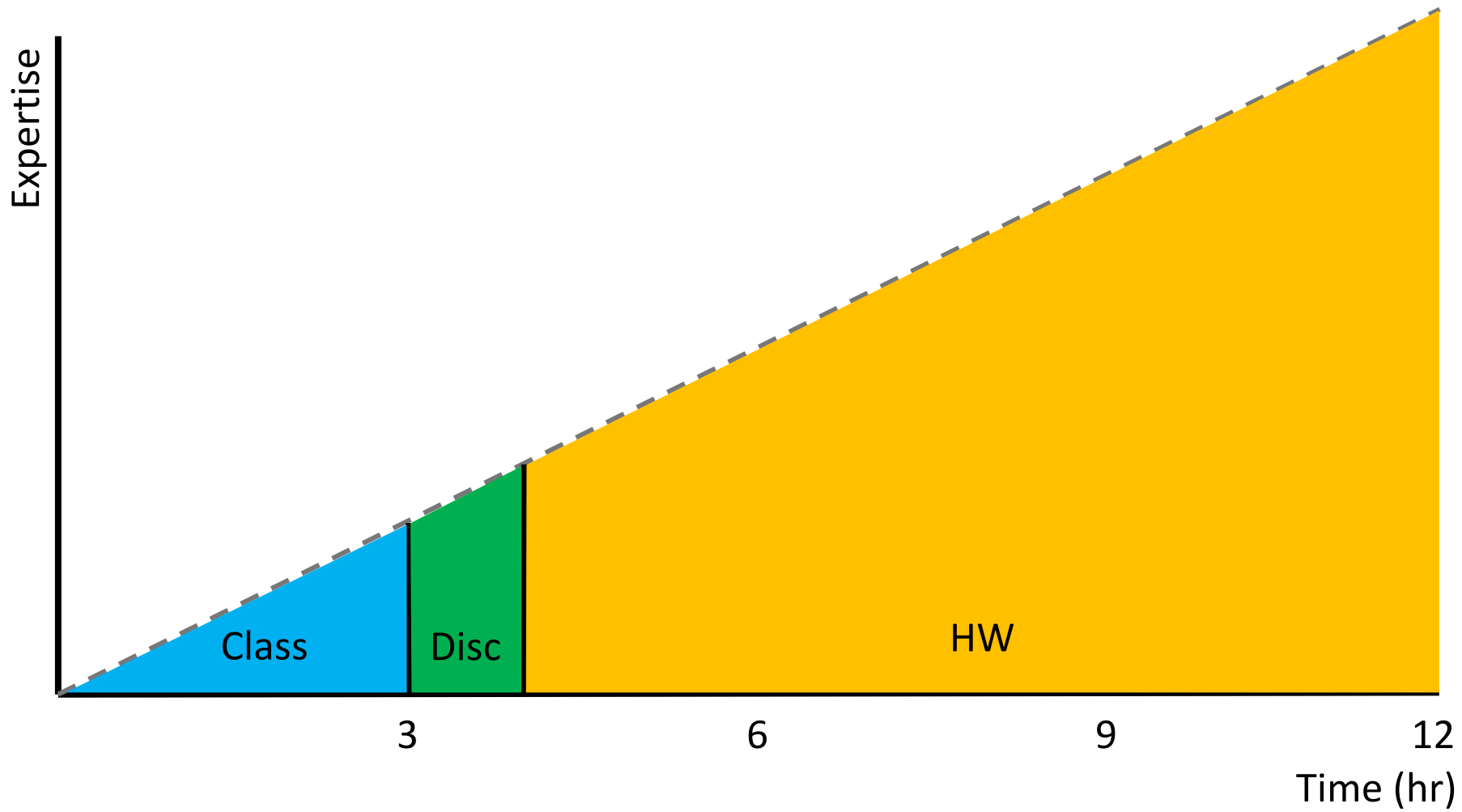


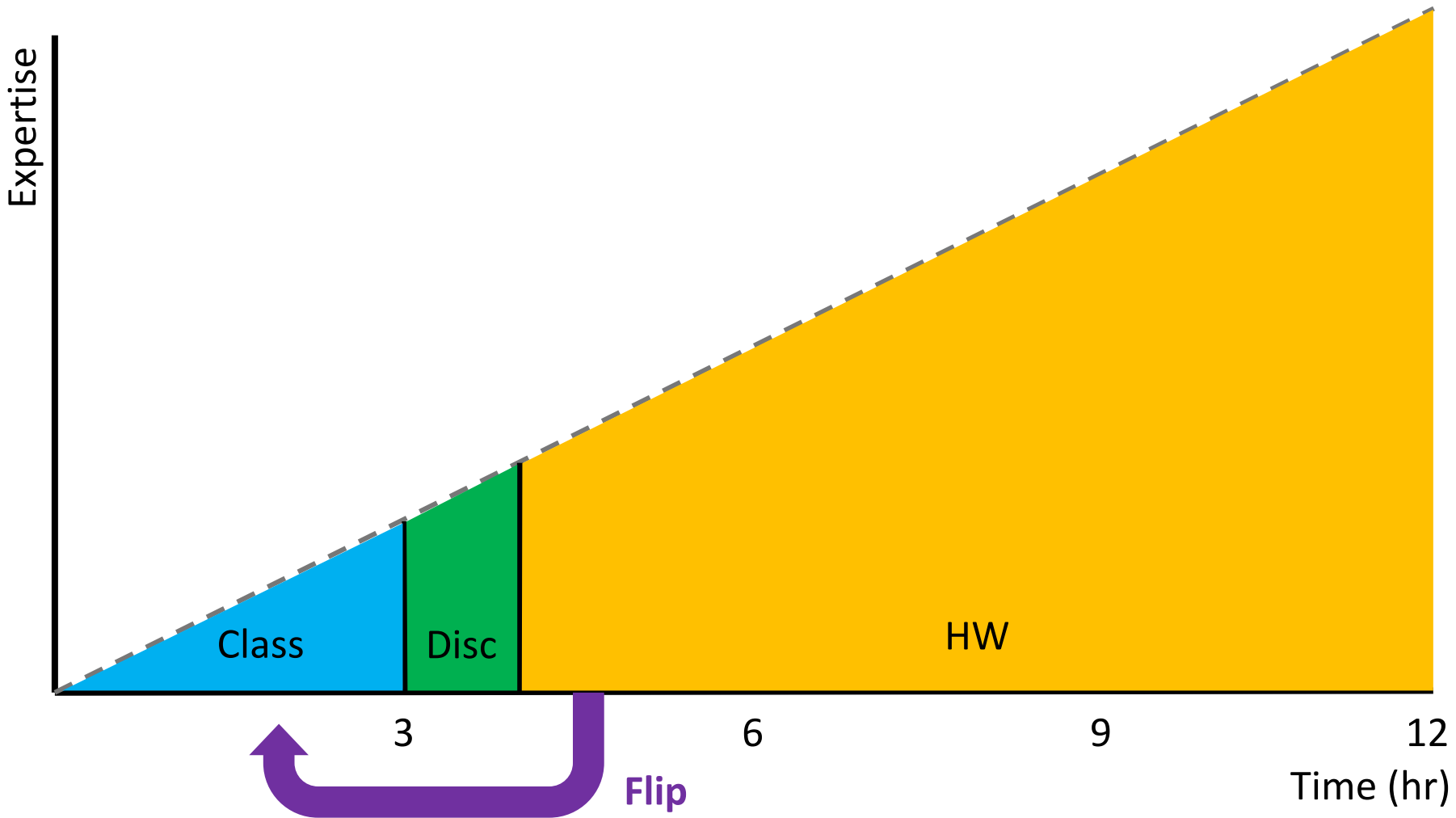


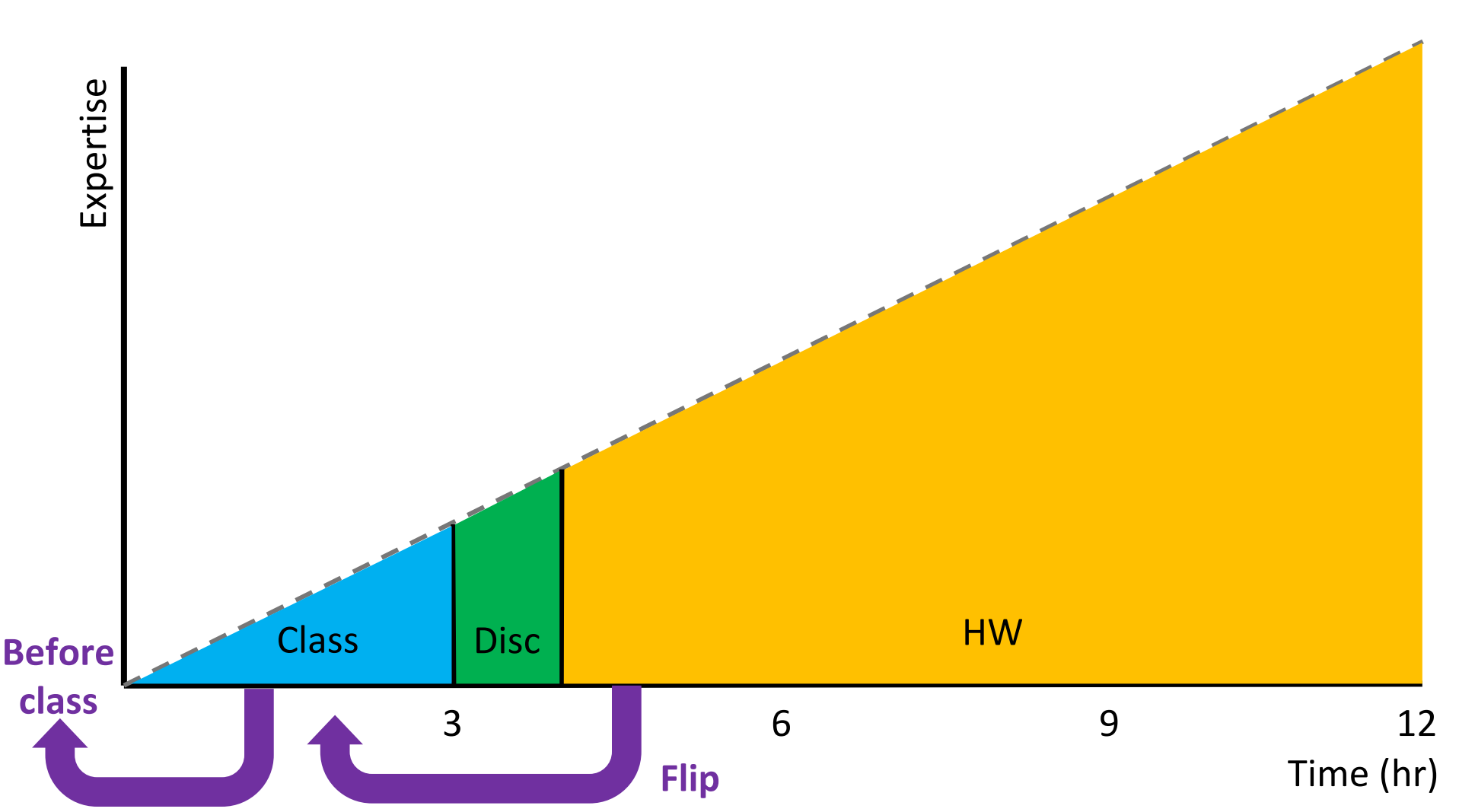


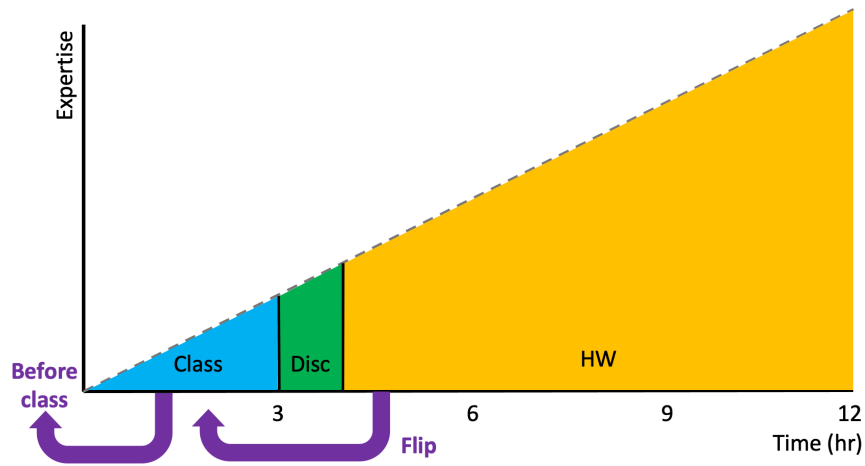








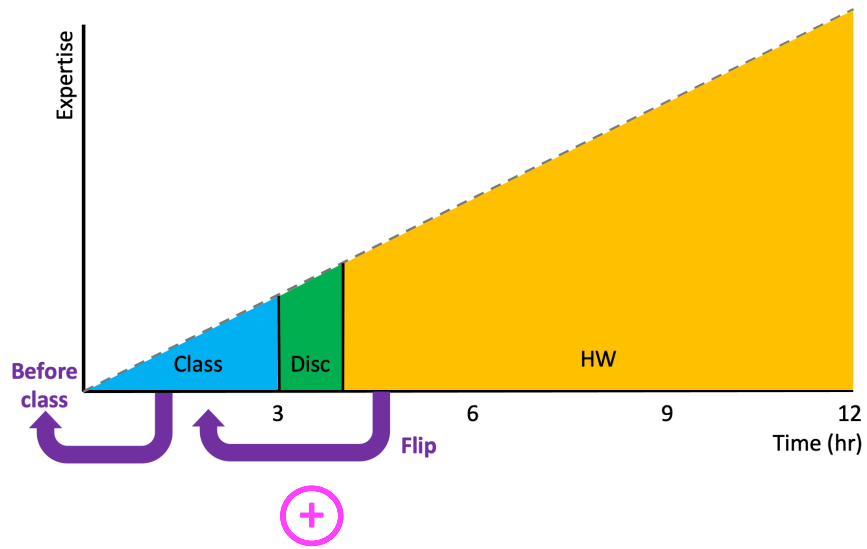




To flip a lesson:

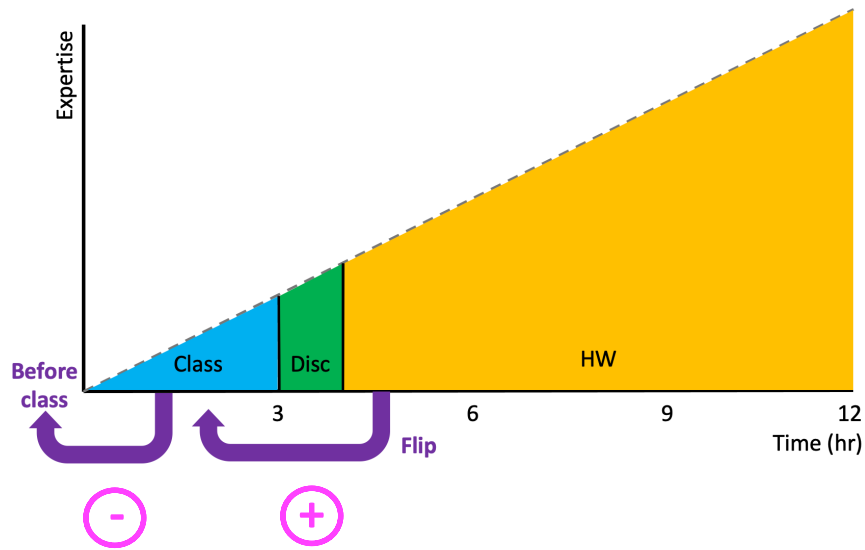
- Take a homework question and bring it into your class time
- To create class time for students to work on the question you introduce, remove some content from your lecture and give it to students as a pre-reading or as a video





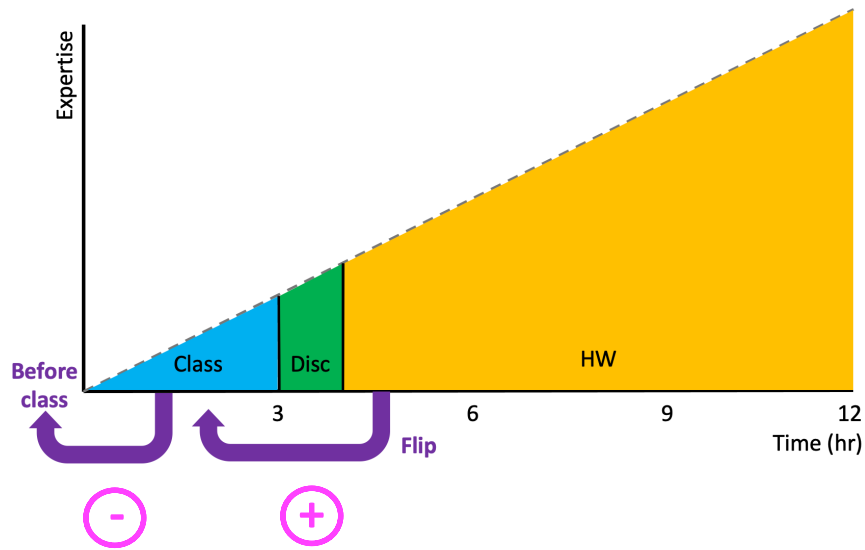
To flip a lesson:

- Take a homework question and bring it into your class time
- To create class time for students to work on the question you introduce, remove some content from your lecture and give it to students as a pre-reading or as a video



To flip a lesson:

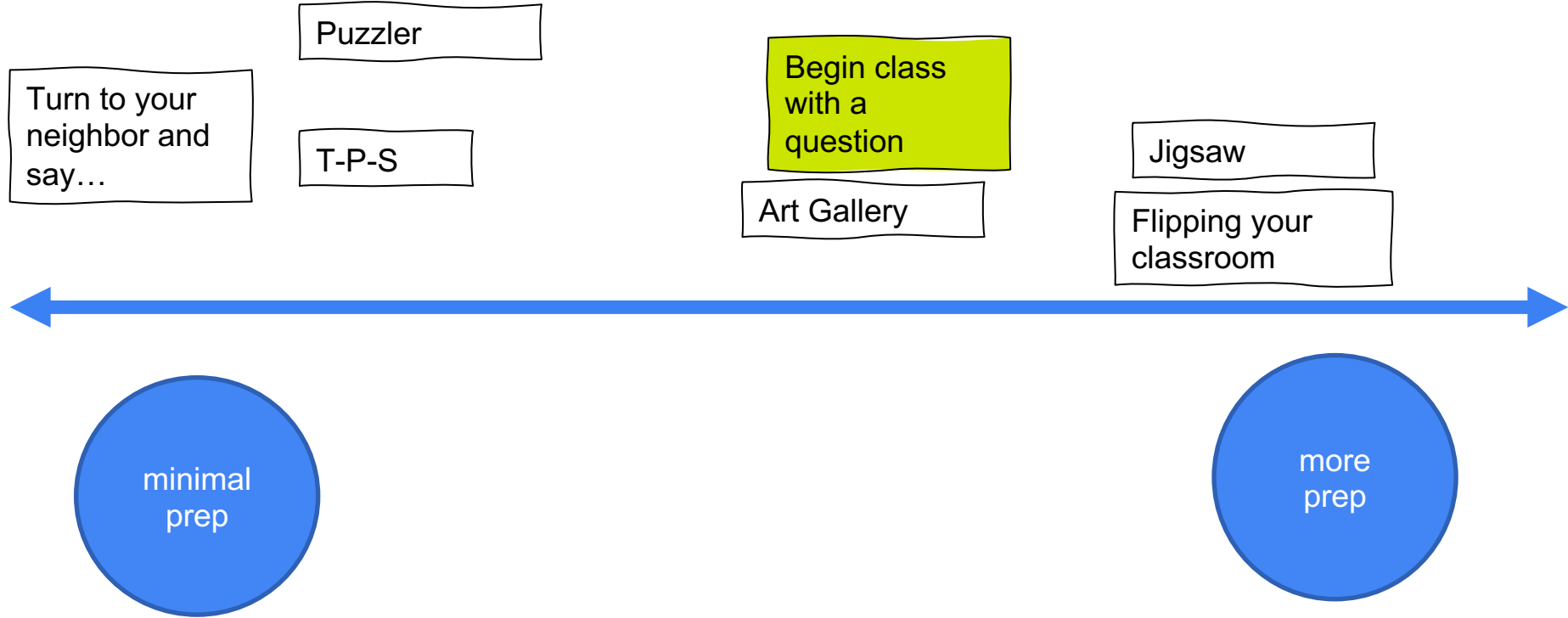
- Take a homework question and bring it into your class time
- To create class time for students to work on the question you introduce, remove some content from your lecture and give it to students as a pre-reading or as a video

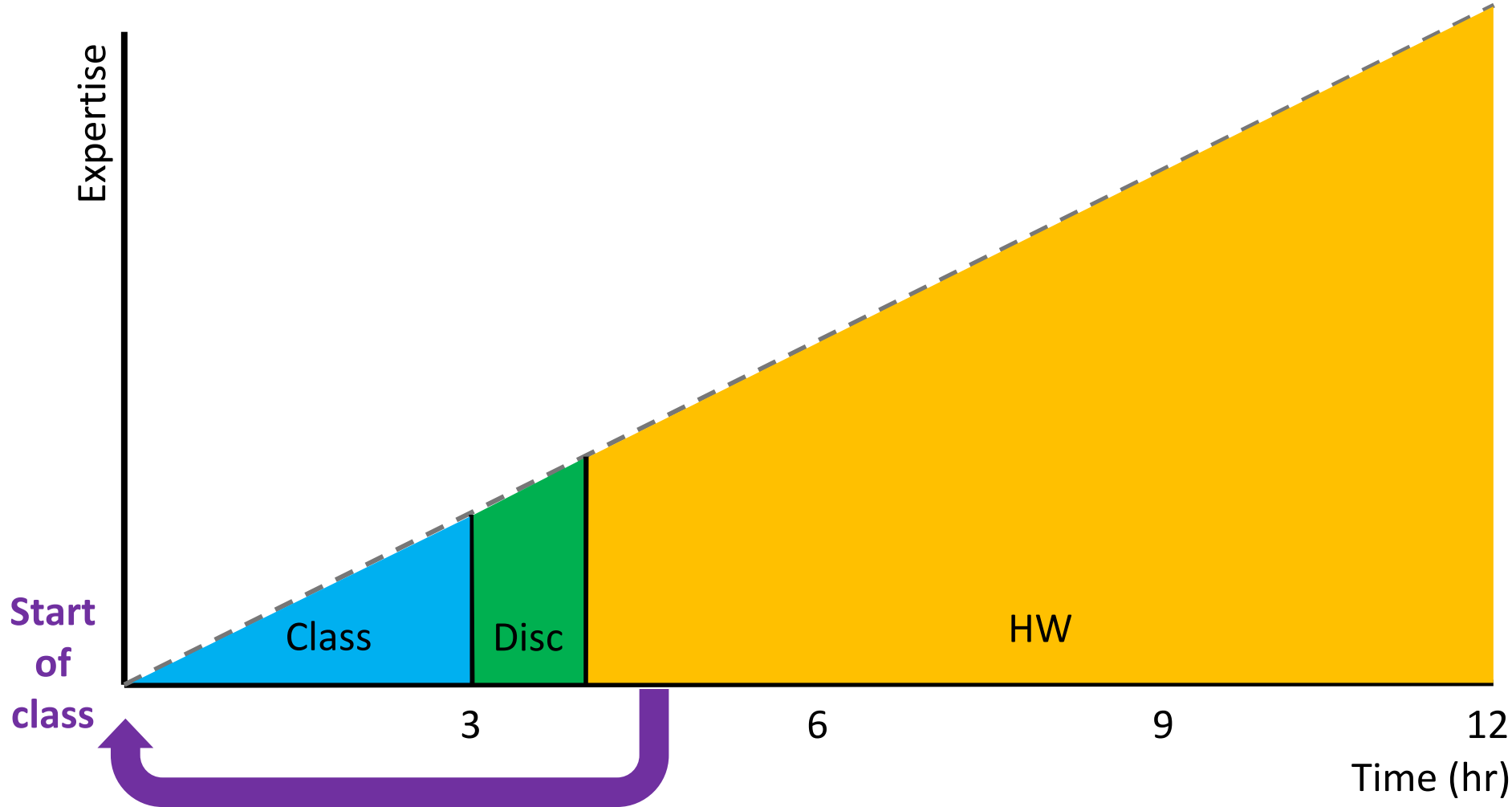


To flip a lesson:

- Take a homework question and bring it into your class time
- To create class time for students to work on the question you introduce, remove some content from your lecture and give it to students as a pre-reading or as a video
- Works best when the **benefit** of you getting to support students as they work on the in-class question outweighs the **cost** of not getting to lecture students about a topic and students needing to learn it via pre-reading /pre-video

# Interactivity → increased small group work





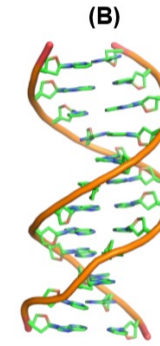
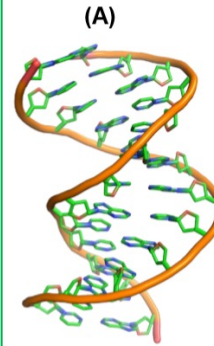
*Lecture 5 :*  
*Nucleic acid structure*

*Lecture 5 :*  
*Nucleic acid structure*

**vs**

*Lecture 5 : Nucleic acid structure*

Warm up: Which of these molecules are DNA?  
Which are RNA?

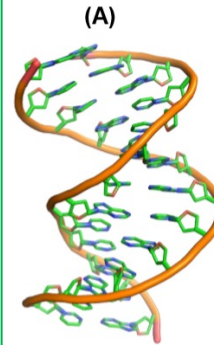


*Lecture 5 :*  
*Nucleic acid structure*

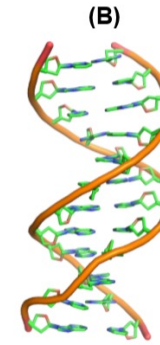
**VS**

*Lecture 5 : Nucleic acid structure*

Warm up: Which of these molecules are DNA?  
Which are RNA?



RNA



DNA

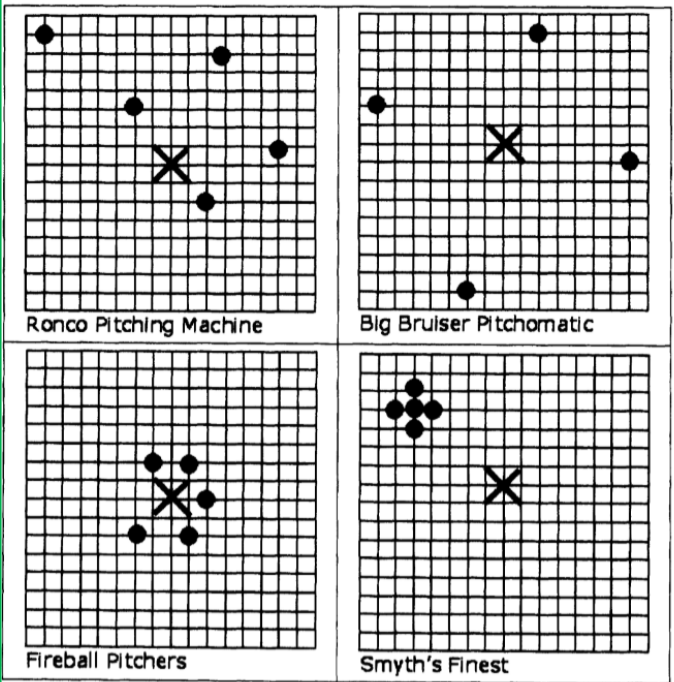


RNA



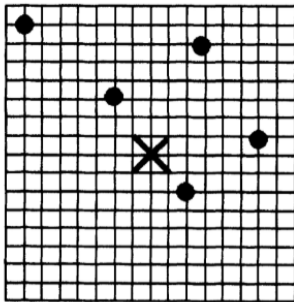
# Based on asking students to work on this:

Here are four grids showing the results from four different pitching machines. The X represents the target and the black dots represent where different pitches landed. Your task is to invent a procedure for computing a reliability index for each of the pitching machines. There is no single way to do this, but you have to use the same procedure for each machine, so it is a fair comparison between the machines. Write your procedure and the index value you compute for each pitching machine using the grids below.

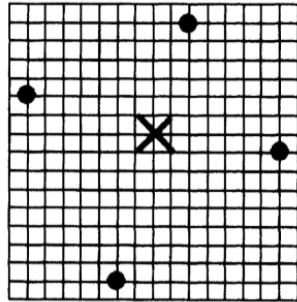


## Based on asking students to work on this:

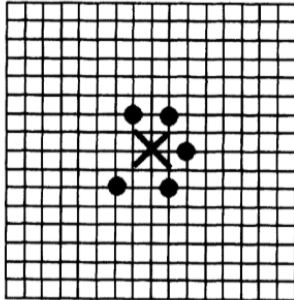
Here are four grids showing the results from four different pitching machines. The X represents the target and the black dots represent where different pitches landed. Your task is to invent a procedure for computing a reliability index for each of the pitching machines. There is no single way to do this, but you have to use the same procedure for each machine, so it is a fair comparison between the machines. Write your procedure and the index value you compute for each pitching machine using the grids below.



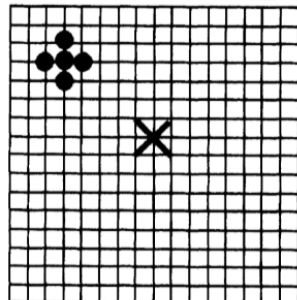
Ronco Pitching Machine



Big Bruiser Pitchomatic



Fireball Pitchers



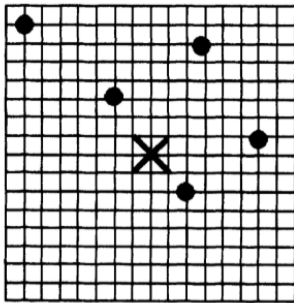
Smyth's Finest

## Before teaching them this:

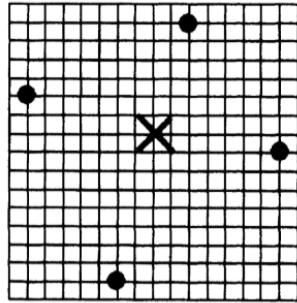
$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

## Based on asking students to work on this:

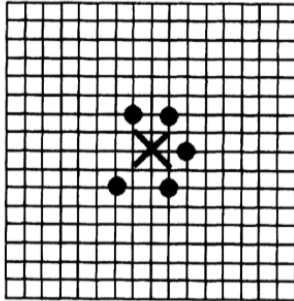
Here are four grids showing the results from four different pitching machines. The X represents the target and the black dots represent where different pitches landed. Your task is to invent a procedure for computing a reliability index for each of the pitching machines. There is no single way to do this, but you have to use the same procedure for each machine, so it is a fair comparison between the machines. Write your procedure and the index value you compute for each pitching machine using the grids below.



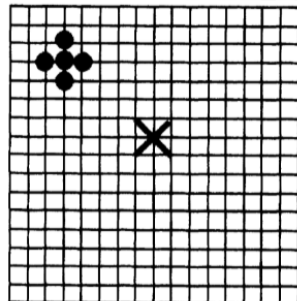
Ronco Pitching Machine



Big Bruiser Pitchomatic



Fireball Pitchers



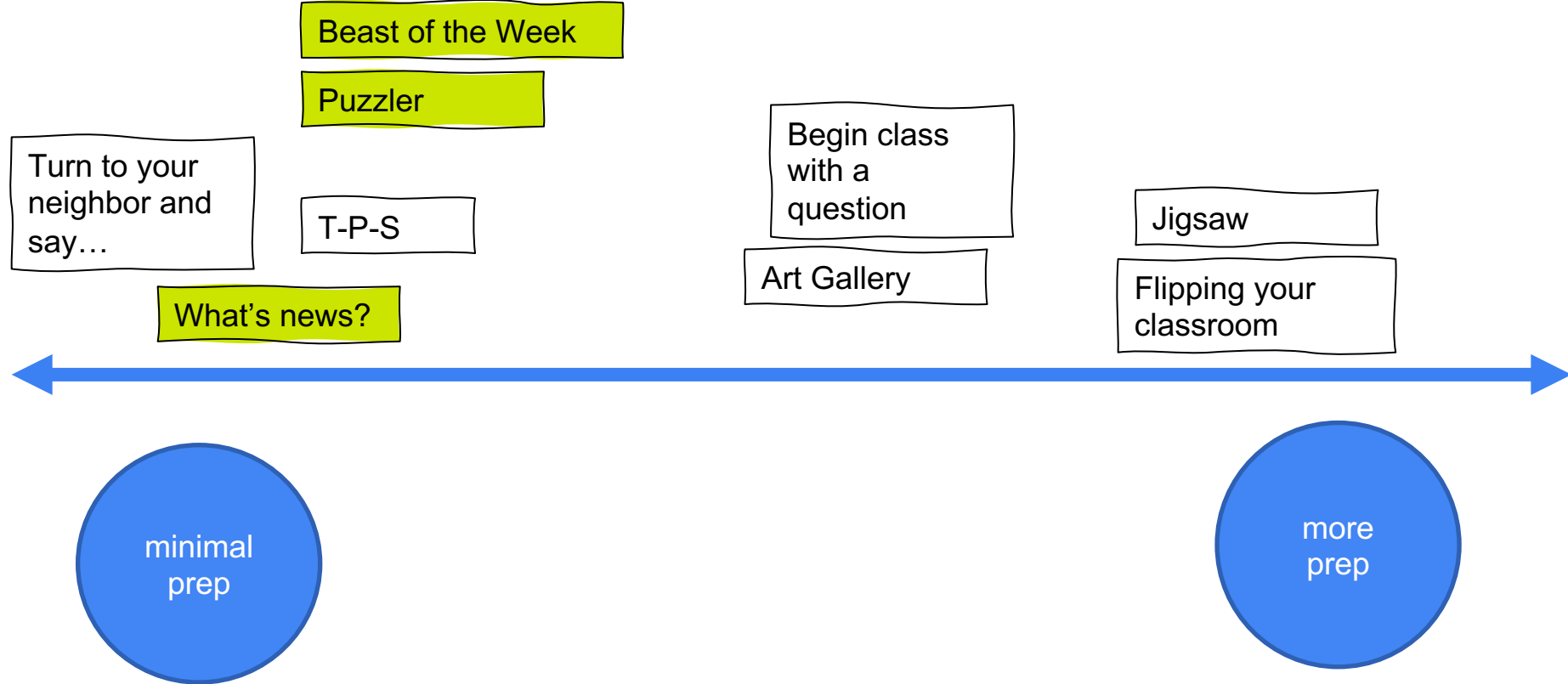
Smyth's Finest

## Before teaching them this:

$$\sigma = \sqrt{\frac{\sum (x - \bar{x})^2}{n}}$$

- Inspires student curiosity, interest
- Creates a “time for telling”
- Leverages “just in time teaching”

# Interactivity → increased small group work





**What's News?**

*or*

**Community Time**

*or*



**Hero of the Week**

*or*

**Beast of the Week**

*or*

**\_\_\_\_\_ of the Week**

## British Virgin Islands

# British Virgin Islands brave two storms in two weeks: 'Maria destroyed most of what was left'

Residents of the tiny British territory begin to pick up the pieces after multiple hurricanes, and life returns to an uneasy mix of the brutal and the banal



< 4164

Alex Dick-Read in Great Mountain, British Virgin Islands

Wednesday 20 September 2017 20.14 EDT



Hurricane devastation on the island of Jost Van Dyke in the British Virgin Islands. Photograph: Capt George Eatwell/AFP/Getty Images

Dawn over the British Virgin Islands (BVI) brought with it the final blows of [Hurricane Maria](#) - the second category 5 hurricane to assault the islands in two weeks.

Advertisement

Certified DREAM DEAL Sales Event

0.9% APR financing for well-qualified buyers on select Certified Pre-Owned Honda vehicles. See dealer for financing details. [See Offer Terms](#)

Certified Pre-Owned HONDA

SHOP NOW





2004-2005



# Angela Burnett

Brandeis '07

**Bachelor of Arts in Environmental Studies and Sustainable Development**

*Summa Cum Laude*, Highest Departmental Honors

Phi Beta Kappa Society; National Society of Collegiate Scholars

**Master of City and Regional Planning**

Rutgers, The State University of New Jersey

# Angela Burnett

Ministry of Natural Resources & Labour, Government of The Virgin Islands  
Environmental Officer (Climate Change) Jul '08-Present

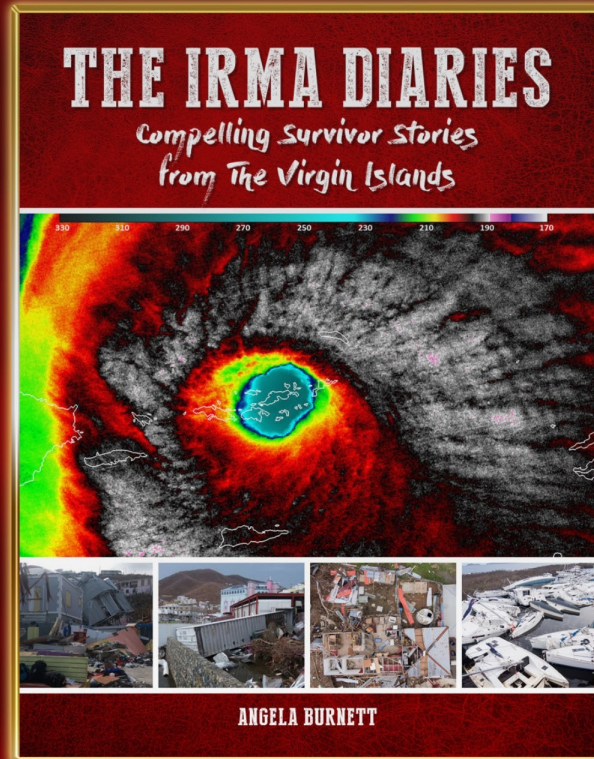
Co-led development of The Virgin Islands Climate Change Trust Fund

Developed The Virgin Islands Climate Change Adaptation Policy, now used as a model for the Caribbean and Pacific

Designed and conducted The Virgin Islands Vulnerability and Capacity Assessment (VCA) of the Tourism Sector to Climate Change, including KAP surveys, a climate assessment, coastal inundation mapping, community static risk mapping, beach and reef vulnerability assessments and an analysis of risk reduction options

Led development of the National Climate Change Committee

# WELCOME TO *THE IRMA DIARIES*



## About *The Irma Diaries*

Beyond the news headlines and apocalyptic images, *The Irma Diaries* takes readers straight into the heart of a Category 5 plus hurricane, the strongest to ever make landfall in Atlantic history.

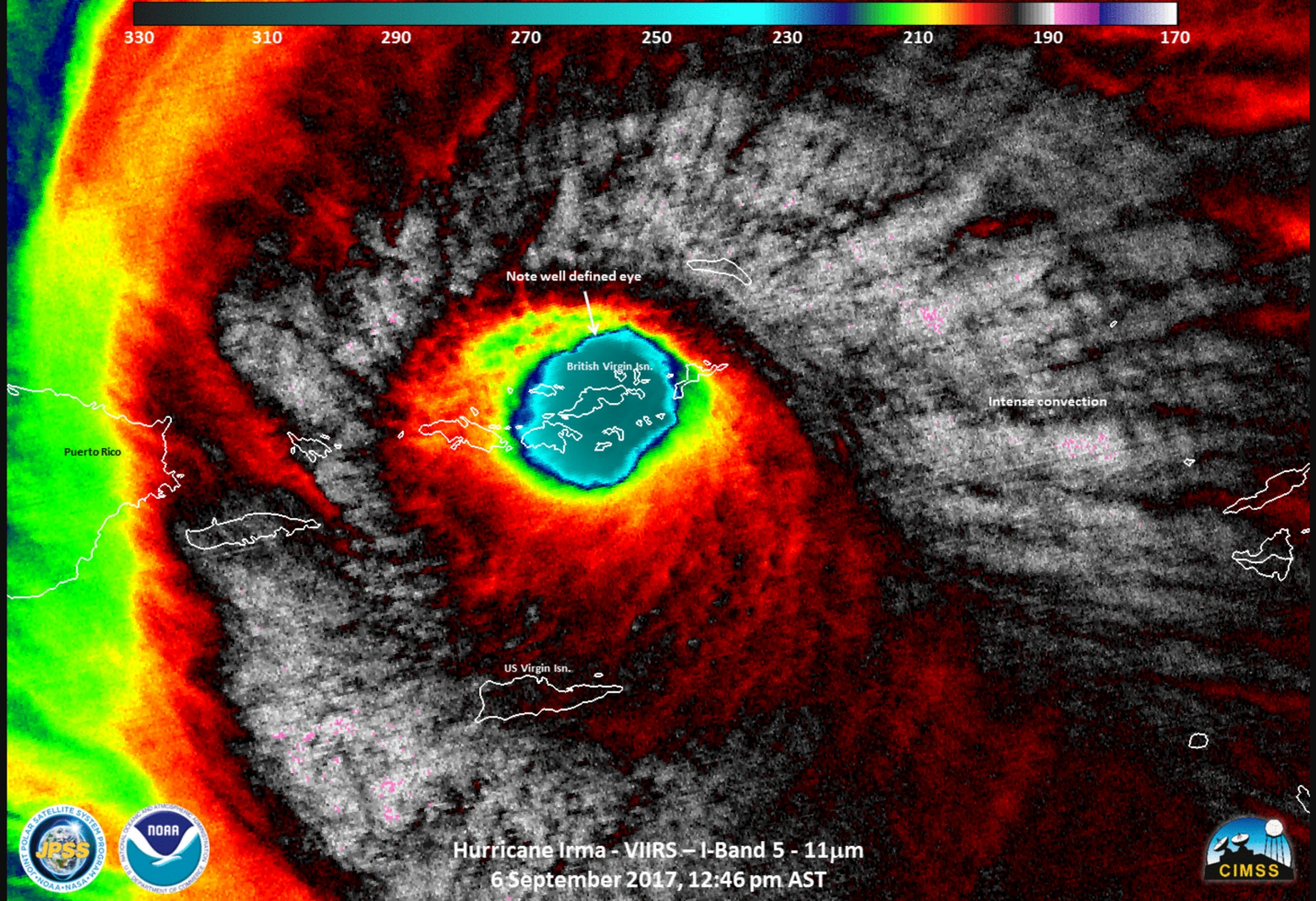
*The Irma Diaries* transposes readers to the Virgin Islands on 6th September, 2017 and into the shoes of islanders on the frontlines of climate change. In a very intimate, personal style, *The Irma Diaries* captures the harrowing and yet amazing, inspiring, and at times amusing accounts of the ordinary turned extraordinary people who battled through Hurricane Irma, minute by minute, and came out alive.

*The Irma Diaries* was written to stir global attention and action on climate change, to help The Virgin Islands adapt to continuing climate change impacts and to help rebuild the lives of those impacted by Hurricane Irma. As such, 25 percent of book proceeds will be donated to The Virgin Islands Climate Change Trust Fund and 1 percent of proceeds to each of the 20 plus contributors of survivor stories.

SNEAK PEEK

Available for purchase online on  
11th December, 2017

330 310 290 270 250 230 210 190 170



Hurricane Irma - VIIRS - I-Band 5 - 11 $\mu$ m  
6 September 2017, 12:46 pm AST





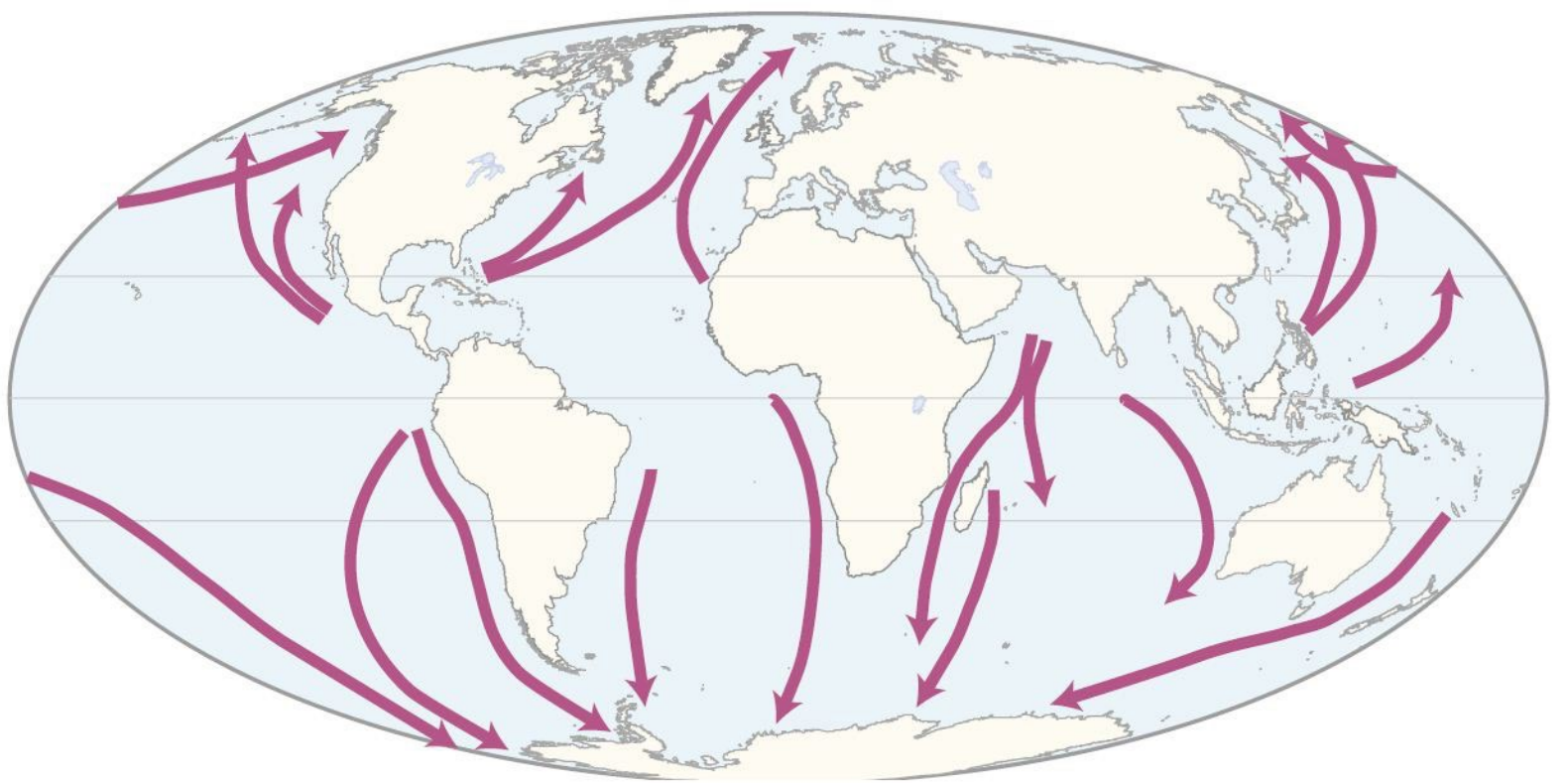
Angela  
Burnett

Brandeis  
'07









Migration routes of the humpback whale  
(Source: CAFFs Arctic Flora & Fauna - 2001)

Beast of the Week!

# Humpback Whale

*Megaptera novaeangliae*

Adult males: 40-48 feet (~12-15 m)

Adult females: 45-50 feet (~14-15 m)

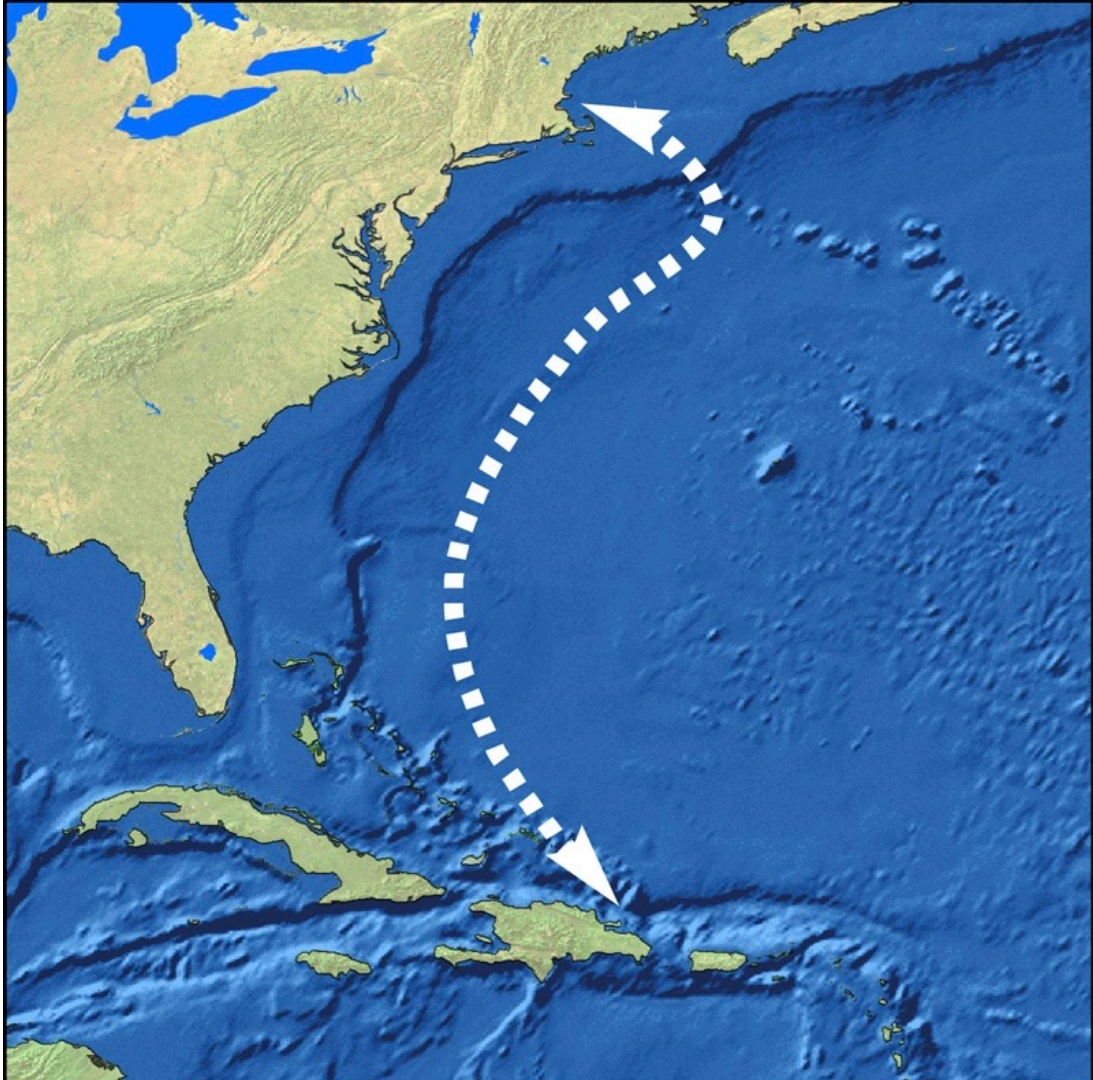
Adult Weight 25 - 40 tons (~23,000-36,000 kg)

Calves: 10-15 feet (3-4.5 m) *at birth*, up to 1 ton (900 kg)

<https://acsonline.org/fact-sheets/humpback-whale/>

*Why the “megaptera”?*

*Why the bizarre migration/feeding pattern?*





# Group Work

- Now that we've shared some of our favorite strategies, we'd love to hear yours!
- In groups of 3-4:
  - We'll give everyone 2 min to quietly think of your favorite approach to introducing interactivity in your own class
  - Share your favorite ways to incorporate interactivity into your class with your neighbors
  - After about 10 minutes, we'll ask each group to share their favorite approach to introducing interactivity.
    - The reporter for each group will be the person with the next birthday.

# Interactivity → increased small group work

