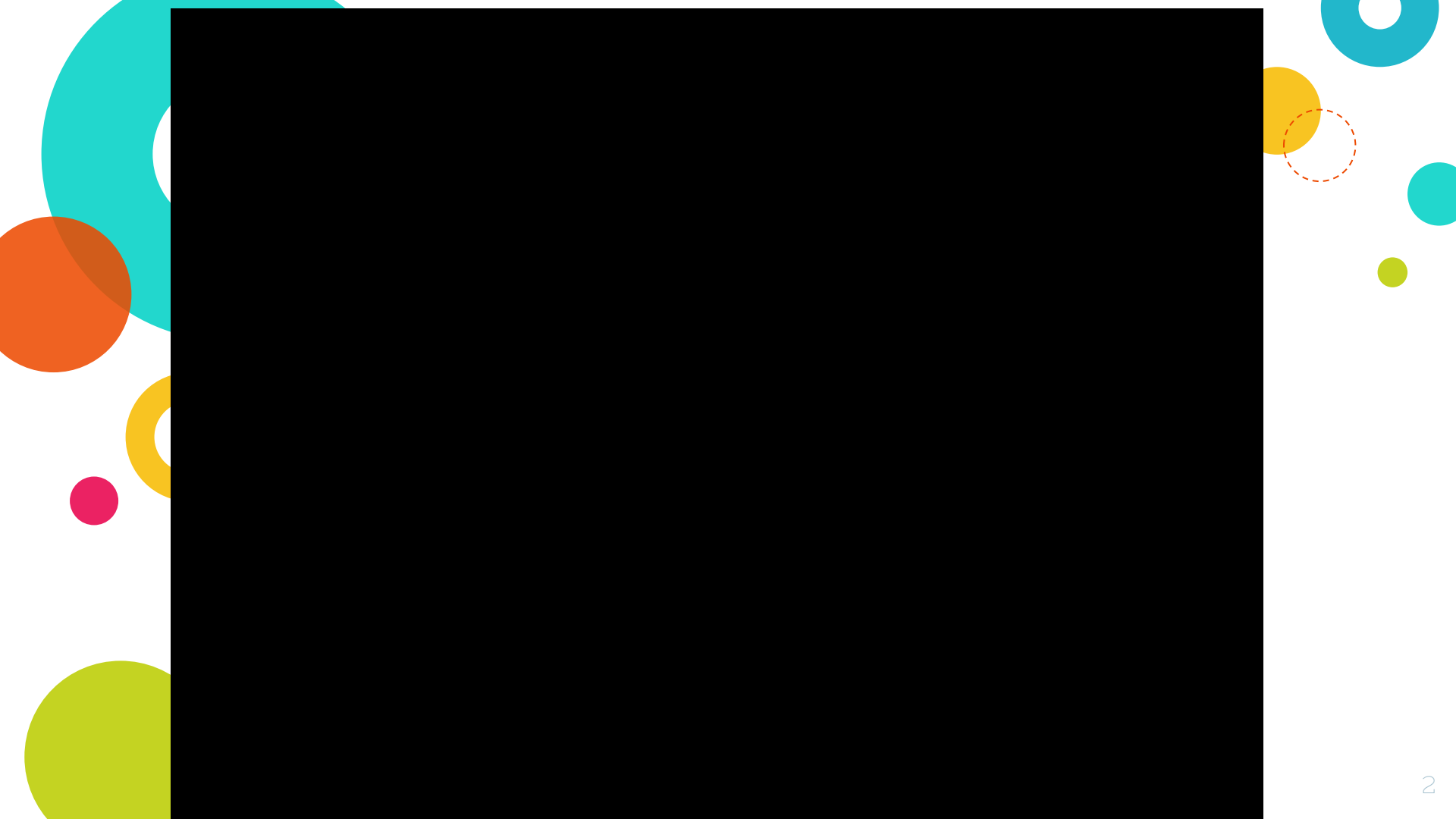
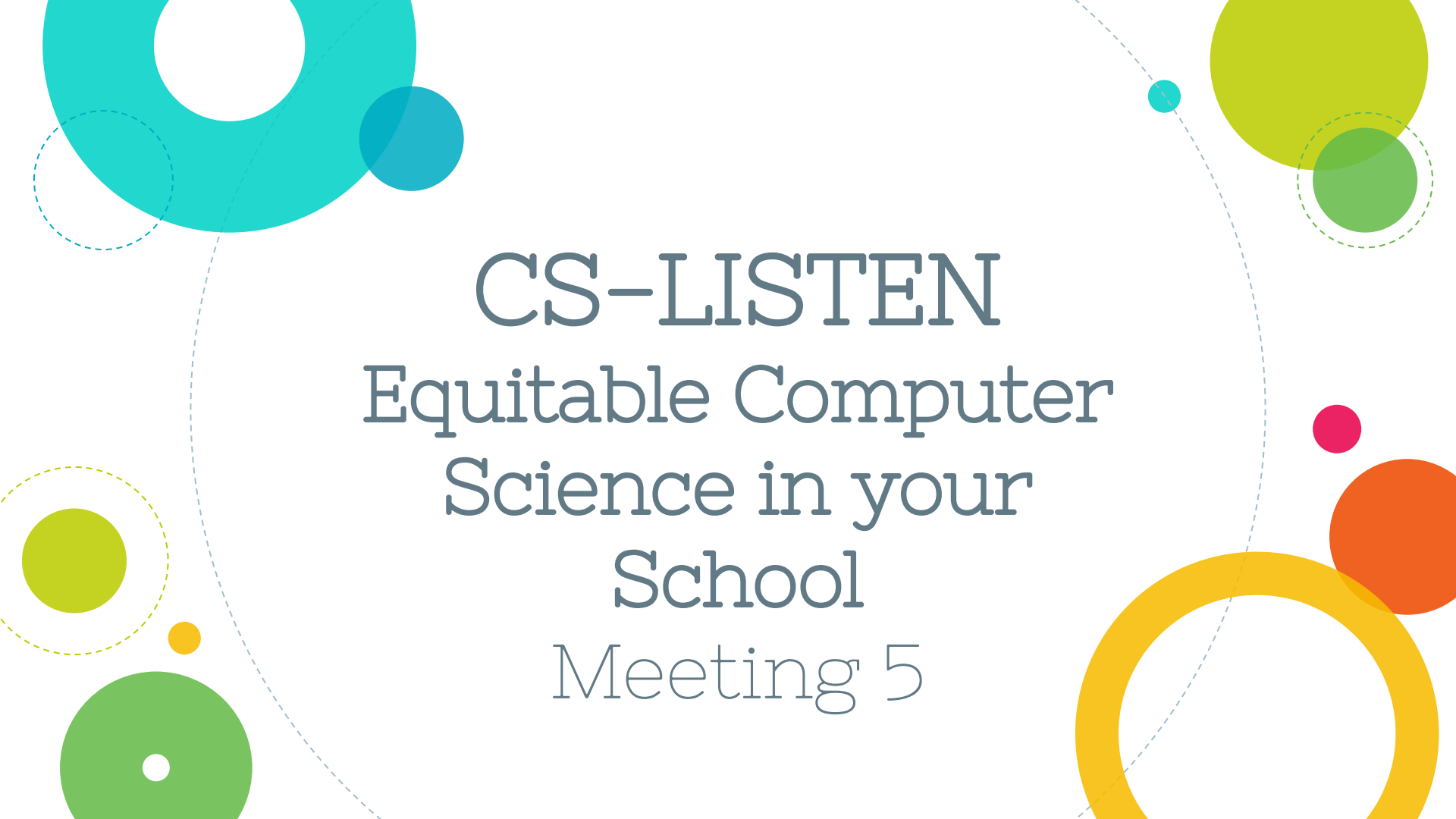




NOTES: To be deleted/Topic Ideas from Spreadsheet

- ◎ Congrats on finalizing your research question(s)!
  - ◎ Learn about different research instruments
  - ◎ Debate pros and cons of each
  - ◎ Vote/consensus model to determine which one to use



A decorative graphic featuring various colored circles (teal, blue, green, yellow, orange, pink) and dashed lines of different colors (teal, green, yellow) scattered across the white background. The text is centered in the middle of the page.

CS-LISTEN  
Equitable Computer  
Science in your  
School  
Meeting 5

# Weekly CPR Check In



## Sharing Prompt of the Day:

If you could choose a genre for your life, what genre would you choose and why?

- © could be what genre you think your life is currently, or...
- © what you want your life's genre to be

# UC San Diego's Consent & Assent forms

Teachers pass out **two forms**: Students turn BOTH signed into your teacher(s) -- Next week

1. **Parent Consent form** -- Turn it into your teacher
2. **Student Assent form** -- Students can sign now and turn it into teacher.

If you don't get the forms signed, you CAN still participate in the project.

But we can't learn from you, so we would LOVE it if you provide the forms back to us.

Understanding the Problem

1. Choose a Research Question

2. Determine the methods

3. Design tools


4. Collect Data

5. Conduct Analysis

**CS-LISTEN  
Student  
Co-Researchers  
(SCR)  
Cycle**

You  
are  
here!





GOAL:  
Pick a research  
method





# Week 4 Recap

- Congrats you finalized your research question!
- Your next focus will be how you measure your variables!

# Designing a Study





What do we mean by Operationally Defining a Variable?

- Process by which researchers spell out precisely **how** a concept will be measured
- Involves identifying the specific research procedures we will use to gather data about our concepts

## Activity:

If you were studying viral videos...

- © How would you operationally define a video that is “viral”?
  - Think about how you could measure how “viral” something is?

If you were determining who would be performing at the halftime show at the superbowl...

- © How would you determine who’s the most popular performer?

# RESEARCH METHODS ARTICLE

Two main types:

Quantitative

Qualitative

Mixed Methods

## Research approaches

Action research

Case studies

Ethnographic

Field experiments

Focus groups

Forecasting research

Futures research

Game or role playing

In-depth surveys

Laboratory experiments

Large-scale surveys

Participant-observer

Scenario research

Simulation and stochastic  
modelling



Quantitative Research:

Quantitative Research produces data that is expressed numerically.

Examples of quantitative data:

- ⊙ Height in inches
- ⊙ # of minutes
- ⊙ # of votes



## Quantitative Research:

- ◎ Focuses on testing theories and hypotheses
- ◎ Is analyzed through math and statistical analysis
- ◎ Mainly expressed in numbers, graphs, and tables
- ◎ Requires many respondents
- ◎ Closed (multiple choice) questions



Quantitative Research:

There are many types of quantitative research methods!

Here are a few...





## Surveys:

- ◎ Contains Many Questions
- ◎ Questions are multiple choice or rated
  - ◎ on a scale of 1-5...
  - ◎ rank the following...
  - ◎ multiple choice makes for cleaner data!
- ◎ On average, parents rated \_\_\_\_\_, x
- ◎ [This many] # of people answered  
\_\_\_\_\_



## Experiments:

- ◎ Create a controlled environment where you can manipulate the variables you want
  - ◎ Establishes cause-effect relationships
  - ◎ Can provide clear or specific conclusions
- ◎ Under these circumstances... x number of students did this...



## Observations:

- ◎ Observes people in their natural environment
- ◎ Most naturalistic of research methods
  - ◎ high accuracy, less room for biases in the making of research method
- ◎ However there might be personal biases
- ◎ Some things may not be observable
- ◎ During \_\_\_\_\_ we saw x # of teachers

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The background is a solid light pink color. A large, faint, dashed white circle is centered on the page. Scattered around the edges are various colorful circles: a pink circle, a yellow circle, a green circle, a cyan circle, and a lime green circle, some solid and some dashed.

**Now, let's talk about  
Qualitative Data!**



# Qualitative Research

This method is used to understand:

- Thoughts
- Concepts
- experiences of people

It makes use of:

- Interviews
- focus groups
- case studies
- discourse analysis
- literature review



# Interviews

Ask open-ended questions verbally to respondents. Describe when, where, and how the interviews were conducted. Include information on:

- a. how you found and selected participants
- b. how many people took part?
- c. what form the conversations took (structured, semi-structured, unstructured)
- d. how long the interviews took
- e. how they were recorded (e.g. audiovisual recordings and note-taking)
- f. what group or community you observed?
- g. how you gained access to the participants

# Focus Groups

- Gathering opinions by having a group of people discuss a topic



# Research Method Selection Protocol: 10 minutes

## **Interview**

### **Questions:**

*What type of research methods are most interested in for your RQ?*

*What appeals to you about that type of method?*

**Two minutes:** In pairs, spend two minutes discussing what you've learned about quantitative vs qualitative methods

### **Three minutes:**

Choose one person to ask questions first. Have the other partner answer.

Partner 1 interviews Partner 2 about the type of methods he/she/they think might work best for your team's RQs. Partner 1 does NOT offer opinions, only asks questions.

**Three minutes:** Partner 2 interviews Partner 1 about the type of methods he/she/they think might work best. Partner 2 does NOT offer opinions, only asks questions.

**One minute:** Choose and prepare to share a research method that you want to share to the whole team.





Time to Share!

What research methods do we think will be most useful for your Research Question:

- How do you plan to use these methods to measure your variables?

## Preview for next week!

- Start thinking about how we want to use all the methods at our disposal for your research question!



