



# EDUCATOR GUIDE

## STEP 2: ASKING QUESTIONS & SOLVING PROBLEMS

1

Use the anchor chart and review the first step of the scientific method: observation. Provide each student with an **Asking Questions & Solving Problems: Student Activity Sheet**. Read together “Observing the world around us can often make us wonder about it. Remember, observation is paying close attention to something to get information. What do we use to make observations?” Our senses!



2

**Pick an item near you and ask the students to make some quick observations about the item.** Ask students what they wonder about the item? Explain that when we wonder about something, we ask questions, just like they did about the item. Say, “*Today, we are going to focus on the second step of the scientific method: asking questions and solving problems.*”

3

**Read together:** “*When we wonder about something, we ask questions to help us understand it. Asking Questions is the second step of the scientific method. In science, we ask questions about things we don’t know the answer to but want to find out. We ask questions to help us solve problems.*”

4

**Ask students to answer the question on their activity sheet:** “*What is a problem that you have solved or would like to solve?*” Have students write out their answers or share their answers verbally.

# SEE IT!



5

**Review with students that there are two worlds in the show:** the paper world of Confetti and the regular world. Explain to students that in this episode, “Not Remotely Funny”, Reese and Caily make observations about airplanes. These observations lead to questions and identifying a problem with the airplane. Asking questions eventually leads to them solving the problem with the airplane. Students will follow along and answer the questions about Reese and Caily’s observations, questions, and problem-solving skills. Read the questions as a class prior to watching the episode.

6

**Watch Episode 8: Not Remotely Funny as a class.** You will want to pause the video to give students the time to write and discuss their answers as a class.

Pause at 2:30 for questions one and two.

Pause at 2:34 for question three.

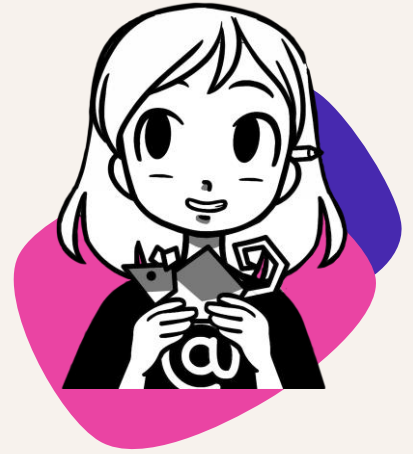
Pause at 4:30 for question 4.

Pause at 6:12 for questions 5 and 6.

7

**Explain to students that often when we come up with solutions to our problems,** they can lead to more questions; just as Reese and Caily had questions about the controller’s weight and what that would do to the plane. That is part of the reason why the scientific method can keep going. Science is always changing and growing because we come up with new questions, new problems to solve, and new understandings of what we know.

# BE IT!



8

**Review with students the first two steps of the scientific method.**

9

**Have students take out their STEM bags. Students will be working on the activity “Taking Flight”.** Take out the instructions and materials needed for that activity (Measuring Tape, Large Straw, Chipboard, and Clay). Put all other items back into the bag for safekeeping. Students will also need scissors and a pencil.

10

**Complete Part 1:** Airplane Prototype and create the plane prototype as a class.

11

**Practice flying the planes and making and recording observations.** Students should do this multiple times. Explain that it is important to practice the skills many times. Discuss their observations as a class.

12

**Explain that in Part 2: How Far Can Your Plane Travel?** Their challenge is to solve the problem of making their plane travel a longer distance than the original. Complete part 2. Discuss what changes they made to their prototype to solve the problem of getting their plane to travel a longer distance than the prototype.



13

**Explain that in Part 3: Make Your Plane Do Tricks!**

Their challenge is to solve the problem of making their plane do some type of trick. There can be different solutions depending on the problem. Complete part 3. Discuss what changes they made to their prototype to get their plane to do tricks.

14

**Inform students that next time you will be focusing on the third step of the scientific method:** data collection.

Say to students “Think about when you were trying to get your plane to fly further. Each time you flew your plane you observed the plane and how far it went, and then changed your design to try to make it better. You were collecting data each time you flew your plane.” Ask students why they think collecting data is important.

15

**Have students place all of the items back into their bags and collect all the bags to use for future lessons.**

It is important for students to know that they will need all of their items for future challenges.

# HERE IS AN EXAMPLE OF A CLASS OUTLINE



**Introduction:** 20 minutes

**See it:** 20-30 minutes

**Be It:** 60-90 minutes

*20-30 minutes*  
Airplane Prototype

*20-30 minutes*  
How Far Can Your Plane Travel

*20-30 minutes*  
Make Your Plane Do Tricks!

