EDUCATOR GUIDE

STEP 2: ASKING QUESTIONS & PROBLEM SOLVING

INTRODUCTION: 5-10 MIN

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!

TEACHER NOTE: You can complete over 2 days.

Day 1: Intro (5-10 minutes) and See it: Show and discuss episode (10-15 minutes).

Day 2: Be it! Complete hands on activity (15-20 minutes).

SUGGESTED ITEMS:
ice cube, leaf, plant, piece of bread

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!

WATCH & DISCUSS EPISODE: 10-15 MIN

5

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 before watching the episode.

6

Have students watch Episode 8: Not Remotely Funny. Watch the video as a class or individually. It is okay to pause or rewatch the video if students need help answering the questions.

7

After students have answered the questions**, talk about the answers together.** You can try reading and answering each question as a class after watching the video or placing students in small groups to work together. Explain to students that when we come up with solutions to our problems, they can often lead to more questions. Just how 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 constantly changing and growing because we come up with new questions and new problems to solve.

BE IT!

HANDS-ON ACTIVITY: 15-20 MIN

8 **Review with students the first two steps of the scientific method.** Remind students that they will not taste anything when visiting their safe place. Explain that it is important to practice the skills many times.

9 **Take students to a safe place to practice the first two steps of the scientific method.** You may take your students to a completely different place or if that is not feasible, have them observe a different part of the same place. For example, if a student looked out a window that faces the back of the building, have them look out a window that faces the front of the building. If you are not with the students physically, have them go to a safe place with an adult. This could be their home, backyard, front steps, park, etc.

OPTION: Make a basic paper airplane for students to observe. Demonstrate throwing the paper airplane and have students talk with a partner about their observations. From there, guide students to generate questions they have about the paper airplane and even real airplanes they observe in the sky. Student can also make their own paper airplanes to test. Give students a piece of paper and demonstrate how to fold (or give pre-printed paper with fold lines).

MANAGEMENT TIPS: Students line up in one spot. Teacher cues students to throw planes on at a time.

10 **Have the students make observations with the four senses:** seeing, hearing, smelling, and touching (if it is safe). You can try reading and answering each question as a class or placing students in small groups to work together.

11 After they have completed their initial observations, have students **complete asking questions and solving problems**. Have students share their questions about their space.

12 **Inform students that next time you will be focusing on the third step of the scientific method: data collection.** Say to students, *"Look at your questions about your space. What might you do to help answer those questions? For example, if my question is: I wonder why there is trash on the ground? When I look around, I notice there is one trashcan and lots of people. I will write this information down. I start to think that lots of people means there is a lot of trash. If there is only one trash can, the trash can may get full easily, so people throw their trash on the ground."* Discuss students' ideas as a class.

HERE IS AN EXAMPLE OF A CLASS OUTLINE:

Introduction: 20 minutes

See it: 20 minutes

Be It: 40 minutes

Observations – 15 minutes
Asking Questions - 15 minutes
Answering Questions to Solve Problems
- 10 minutes