

## Lesson 2 | ENGINEERING A SAFETY NET

In this superhero-inspired lesson, students use teamwork and engineering skills by building a safety net strong enough to hold an object.

### OBJECTIVE

Students will work with a team to design a safety net using the engineering design process, following group norms.

### STANDARDS

#### NGSS

#### Grades 1–2

ETS1-1. Define a problem

ETS1-2. Illustrate how an object's shape helps it solve a problem

ETS1-3. Compare data from testing solutions

#### Grade 3

ETS1-1. Define a problem

ETS1-2. Brainstorm multiple solutions

ETS1-3. Test solution to improve the design

#### CASEL (SEL)

**Relationship Skills:** Practicing teamwork and collaborative problem-solving

**Self-Awareness:** Having a growth mindset

### TIME

60 minutes

### MATERIALS

- Team Up for the Safety Net Challenge activity sheet
- Meet Your Inner Hero at Avengers Campus activity sheet
- Materials for engineering challenge (suggested: yarn, masking tape, paper)



**Remote Ready**

**1 Teamwork on campus!** At Avengers Campus, heroes learn how to work together. Tell students that they are ready for the next step in the hero recruitment process—solving a challenge as a team.

**2 Invite** students to share times when they had to work with others to solve a problem. Share characters such as the Avengers, who have unique strengths but are stronger and more successful as a team than when they work alone.

**3 Explain** that students will work in teams to solve a design challenge. Teams will build a net that's strong enough to catch an object dropped onto it. After all—even superheroes need safety nets!

**4** As a class, determine the **success criteria**—how will students know their design works? (For example, the net must support a book dropped from two feet above.) List these on an anchor chart.

As a class, determine the **constraints**—what materials will they be able to use? How much time will they have to design and build their safety net? How heavy should the dropped object be? Add these to the anchor chart.

**5 Before** dividing into groups, create a list of what teamwork should look and sound like. (For example, teamwork looks like sharing supplies such as scissors and looking at the person who is talking. Teamwork sounds like, “What do you think of this idea?” and “I can help you with...”).



**6 Distribute** the **Team Up for the Safety Net Challenge** activity sheet. Have students work in teams to brainstorm, design, test, and improve their safety nets.

**Remote tip:** Students can observe the teacher building and testing the safety net (based on the students' plan) during a video conferencing session. Students can provide suggestions for improvement during and after the demonstration.

**7 Have** students use the activity sheet to record results and reflect on teamwork. How did their team of heroes help each other be even more heroic?

**8 Distribute** the Meet Your Inner Hero at Avengers Campus activity sheet for a family conversation activity plus a chance to win a trip for four to Avengers Campus from Scholastic.

**FOR FAMILIES** Chance to win a trip for four to Avengers Campus at *Disney California Adventure*® Park!

Name \_\_\_\_\_

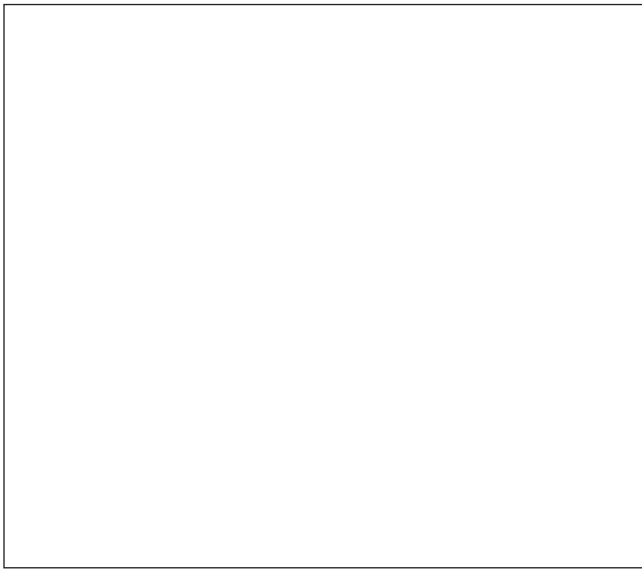
## TEAM UP FOR THE SAFETY NET CHALLENGE

At Avengers Campus, Super Heroes practice strong teamwork skills. Show off your teamwork by working with your team to build a safety net that can hold an object that falls on it. Then answer the questions.

### Your Design

**1 Look** at your building supplies. Talk with your team. Make a plan for your safety net design.

**2 Explain** your plan below. Draw and label a picture or use sentences.

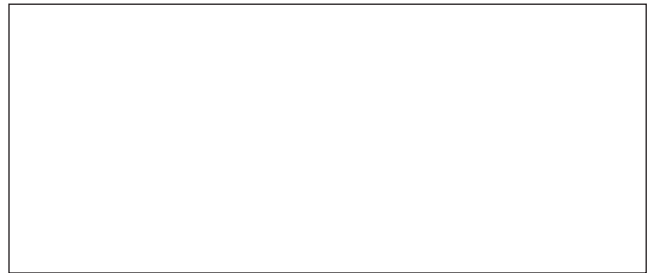


**3 Build** your safety net. How well did your plan work? What could you fix?

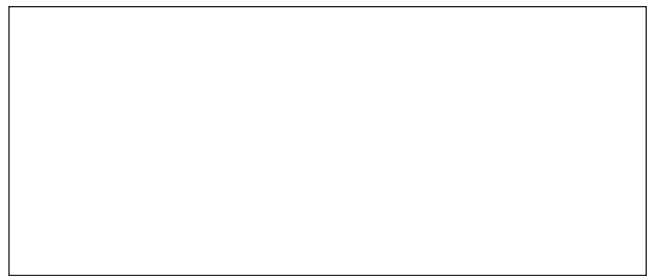


### Your Team of Heroes

**1 How** did your teammates support each other?



**2 When** did a teammate suggest an idea you had not thought of?



**3 What** is a way your team of heroes could work better together next time?

