inquisitive

GRADE 3 · ENGINEERING DESIGN · FAST PATH

Unit: Forces

Lessons in unit: 3 · 7 days · up to 30 min per day · 195 min total · ↳ Time-saving teaching move · ★ Checkpoint

1. Let's Build Bridges	DAY 1 · 20 MIN	DAY 2 · 25 MIN	DAY 3 · 30 MIN
PHENOMENON QUESTION **How can we design a bridge that won't fall down?** **OUTCOME** **Understand that the design process is important in generating safe products.** **Work collaboratively to generate and compare multiple solutions to a problem.** **Recognize that engineers improve existing technologies when designing new products.** **TIME** **3 days · up to 30 min per day** **75 min total**	10 MIN Activity 1	20 MIN Activity 4	**PREP** Set out bridge materials, anchors, measuring tapes and test weights.
	5 MIN Activity 2	5 MIN Activity 5	20 MIN Activity 6
	5 MIN Activity 3 ↳ Discuss both questions in groups; share with a neighboring group.		10 MIN Activity 7

2. Putting Forces to Work

PHENOMENON QUESTION
How can we hover?

OUTCOME
Identify and define a design problem that can be solved through the development of an object.
Recognize that the success of a designed solution is determined by considering the desired features of a solution.

TIME
2 days · up to 30 min per day
60 min total

DAY 4 · 30 MIN

15 MIN	Activity 1
5 MIN	Activity 2
10 MIN	Activity 3 ↳ Read together and model one table row; pairs complete and explain the other two.

DAY 5 · 30 MIN

PREP Set out paper, folding instructions and a camera; clear a flight-testing space.

15 MIN	Activity 4 ↳ Keep both parts; share drawings and ‘What if?’ questions with a partner.
15 MIN	Activity 5

3. Make Me Move

PHENOMENON QUESTION
Can we make something that uses force to move?

OUTCOME
Recognize that they should research a problem before beginning to design a solution.
Identify that testing a solution involves investigating how well it performs.
Understand that communicating with peers about proposed solutions is an important part of the design process.

TIME
2 days · up to 30 min per day
60 min total
Assessment: Anchor Maps and Autogradable Summative Assessments are not included within this pacing guide.

DAY 6 · 30 MIN

15 MIN	Activity 1
15 MIN	Activity 2, Part 1 ↳ Use products from Lesson 2 as the source allows; record ideas and draw the labeled design.

DAY 7 · 30 MIN

PREP Set out sorted recyclables, tools, mini figures, timers and rulers.

15 MIN	Activity 2, Part 2 List materials, build and document; test at least three times.
15 MIN	Activity 3