inquisitive

GRADE 4 · PHYSICAL SCIENCES · FAST PATH

Unit: Waves

Lessons in unit: 4 · 12 days · 20–30 min per day · 315 min total · ↳ Time-saving teaching move · ★ Checkpoint

Lesson 1: Catch the Wave	DAY 1 · 30 MIN	DAY 2 · 30 MIN	DAY 3 · 20 MIN
PHENOMENON QUESTION **How are waves formed?** **OUTCOME** **I can develop a model to describe the pattern of wave behavior.** **TIME** **3 days · 20–30 min per day** **80 min total**	**PREP** Fill bowls and set out droppers before the investigation.	**PREP** Set out ropes and clear a safe space.	15 MIN Activity 7 ★
	5 MIN Activity 1	5 MIN Activity 4 ↳ Activity 4: build two shared drawings from students' explanations of the wave causes.	5 MIN Activity 10
	5 MIN Activity 2	10 MIN Activity 5 ↳ Activity 5: use simultaneous partner teaching; check pairs instead of serial class reports.	
	20 MIN Activity 3	15 MIN Activity 6	

Lesson 2: Modeling Waves	DAY 4 · 30 MIN	DAY 5 · 30 MIN	DAY 6 · 30 MIN
PHENOMENON QUESTION **What can waves do?** **OUTCOME** **I can develop a model to explain that waves can cause objects to move.** **TIME** **3 days · 30 min per day** **90 min total**	**PREP** Choose an outdoor area or clear walking space.	**PREP** Set out tubs, floating toys and weights near water.	**PREP** Tie a ribbon onto the demonstration rope and secure one end.
	8 MIN Activity 1 ↳ Activity 1: have everyone point and show wave features together instead of calling volunteers.	30 MIN Activity 4 ★	8 MIN Activity 5
	15 MIN Activity 2		20 MIN Activity 6 ★
	7 MIN Activity 3 ↳ Activity 3: share boat experiences with a partner instead of serial class accounts.		2 MIN Activity 9

Lesson 3: Sending Information

PHENOMENON QUESTION
How did people send messages before cell phones?

OUTCOME
I can design a way to use light to send information across a distance.

TIME
3 days · 20–30 min per day
75 min total

DAY 7 · 30 MIN

- 5 MIN — Activity 1
- 5 MIN — Activity 2
  ↳ Activity 2: discuss the video questions in pairs instead of jotting answers and reporting to the class.
- 20 MIN — Activity 3

DAY 8 · 25 MIN

PREP Set out flashlights and cardboard screens. Do not shine lights into eyes.

- 5 MIN — Activity 4
  ↳ Activity 4: collect improvements against all three criteria on one class chart.
- 20 MIN — Activity 5

DAY 9 · 20 MIN

- 15 MIN — Activity 6 ★
- 5 MIN — Activity 7
  ↳ Activity 7: compare binary and Morse code orally with a partner instead of notebook responses.

Lesson 4: Get the Message

Assessment: Anchor Maps and Autogradable Summative Assessments are not included within this pacing guide.

DAY 10 · 20 MIN

- 5 MIN — Activity 1
  ↳ Activity 1: exchange code ideas with a partner instead of serial class sharing.
- 15 MIN — Activity 2

DAY 11 · 25 MIN

- 10 MIN — Activity 3
- 5 MIN — Activity 4
  ↳ Activity 4: explain the binary-reading answers orally.
- 10 MIN — Activity 5
  ↳ Activity 5: build a shared communication-method list; each student contributes a personal example.

DAY 12 · 25 MIN

- 20 MIN — Activity 6 ★
- 5 MIN — Activity 9