inquisitive

GRADE 4 · ENGINEERING DESIGN · FAST PATH

Unit: Helping Nature

Lessons in unit: 3 · 8 days · 5–30 min per day · 205 min total · ↳ Time-saving teaching move · ★ Checkpoint

1. What a Pest!

PHENOMENON QUESTION
What is a pest?

OUTCOME
Understand that a pest can be a plant or animal in the wrong place.
Collaborate to develop possible solutions by modifying a bike helmet to prevent a bird swooping and attacking.

TIME
2 days · 30 min per day
60 min total

DAY 1 · 30 MIN

10 MIN	**Activity 1** ↳ Read the eBook, then have pairs name the pests instead of taking turns sharing with the class.
5 MIN	**Activity 2** ↳ Pairs discuss every statement; the teacher records their additional ideas on class sticky notes.
5 MIN	**Activity 3**
10 MIN	**Activity 4** ↳ Watch once, then have pairs answer both questions before sharing one explanation.

DAY 2 · 30 MIN

PREP Set out shared trays of the available helmet materials.

5 MIN	**Activity 5**
25 MIN	**Activity 6**

2. How Can We Help?

PHENOMENON QUESTION
How can we help animals?

OUTCOME
Explore and define design opportunities.
Develop and communicate design ideas through describing, drawing, and modeling a sequence of steps.
Use given components and equipment to safely make a solution.

TIME
3 days · 5–30 min per day
55 min total

DAY 3 · 30 MIN

5 MIN	**Activity 1** ↳ Model one habitat example, then partners explain the remaining examples.
5 MIN	**Activity 2** ↳ Read and complete the matching interactive as a class.
5 MIN	**Activity 3** ↳ Pairs compare every feeder, then share their recommended choice.
15 MIN	**Activity 4 · Parts 1–3**

DAY 4 · 20 MIN

PREP Set out shared containers of recycled materials and bird food.

20 MIN	**Activity 4 · Parts 4–5** Make and hang the feeders; draw predictions. Save final observations for Day 5.

DAY 5 · 5 MIN

SCHEDULE Wait three days after hanging the feeders before Day 5.

5 MIN	**Activity 4 · Part 5 continued** Observe and draw what happened; compare with the prediction.

3. Water Transporter

PHENOMENON QUESTION
How can we move water easily?

OUTCOME
Design, plan, produce, test, and evaluate a model of a water irrigation system that could be used to water a vegetable garden.

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

DAY 6 · 30 MIN	DAY 7 · 30 MIN	DAY 8 · 30 MIN
10 MIN **Activity 1**	**PREP** Set out shared material trays and measuring equipment.	10 MIN **Activity 6 · Step 4 continued** Finish building and adjusting the model before the formal test.
5 MIN **Activity 2** ↳ After the video, pairs explain all three questions instead of sequential class responses.	10 MIN **Activity 5** ↳ Set the minimum distance before class; complete the remaining design brief together.	20 MIN **Activity 7**
5 MIN **Activity 3**	20 MIN **Activity 6 · Steps 3–4** Complete the design sketch and begin building. Keep models for Day 8.	
10 MIN **Activity 4**		