inquisitive

GRADE 5 · PHYSICAL SCIENCES · FAST PATH

Unit: Structure and Properties of Matter

Lessons in unit: 4 · 15 days · 20–30 min per day · 430 min total · ↳ Time-saving teaching move · ★ Checkpoint

1. Too Small to Be Seen

PHENOMENON QUESTION
If you can't see something, how do you know it's there?

OUTCOME
I can draw a model that represents different types of matter, showing the particles too small to be seen.

TIME
4 days · 30 min per day
120 min total

DAY 1 · 30 MIN

- 5 MIN — Activity 1
- 15 MIN — Activity 2
  ↳ After sorting, collect examples on one class chart instead of separate group lists.
- 10 MIN — Activity 3
  ↳ Discuss the three states as a class, with students explaining their choices.

DAY 2 · 30 MIN

PREP Set out paired trays with measured sugar in container, lukewarm water, hand lenses and clean spoons.

- 20 MIN — Activity 4
  ↳ Use prepared trays; discuss the final questions together.
- 10 MIN — Activities 5–6
  ↳ Read each state's particle description as you explore its interactive examples.

DAY 3 · 30 MIN

PREP Clear space for the particle game; set out paired bottles and balloons.

- 15 MIN — Activity 7
- 10 MIN — Activity 8
  ↳ Students draw their model, then explain both answers to a partner.
- 5 MIN — Activity 9 · Part 1 ★
  Predict and test. Keep the bottles for Day 4.

DAY 4 · 30 MIN

- 25 MIN — Activity 9 · Parts 2–3 ★
  Complete the individual explanations and both particle diagrams.
- 3 MIN — Activity 10
  ↳ Answer the three questions orally with a partner.
- 2 MIN — Activity 13

2. Material Properties

PHENOMENON QUESTION
How can we identify the properties of a material?

OUTCOME
I can compare different materials based on their observable properties.

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

DAY 5 · 20 MIN

10 MIN **Activity 1**
↳ Use partner guesses after each clue; share the final explanation once.

5 MIN **Activity 2**

5 MIN **Activity 3**

DAY 6 · 30 MIN

PREP Prepare labeled powder cups, results tables and test objects; set out matched spoons with softened butter.

30 MIN **Activity 4**
↳ Give groups equipment trays and printed tables. Start the heat demonstration before groups test powders and magnetism; finish by comparing the spoons.

DAY 7 · 30 MIN

7 MIN **Activity 5**
↳ Read the eBook as a class; take one example per property.

10 MIN **Activity 6 ★**

10 MIN **Activity 7**
↳ In pairs, give three clues for each of three objects orally instead of writing quizzes.

3 MIN **Activity 10**

3. Mixing Matter

PHENOMENON QUESTION
What can happen if we mix different substances together?

OUTCOME
I can describe how mixing some substances can produce a new substance.

TIME
5 days · 25–30 min per day
140 min total
****This lesson is being re-written, pacing guide will be updated soon****

DAY 8 · 30 MIN	DAY 9 · 25 MIN	DAY 10 · 30 MIN	DAY 11 · 25 MIN	DAY 12 · 30 MIN
PREP Mark cups at 100 mL and 200 mL; set out small shared containers of each solid and separate spoons.	**PREP** Keep each group's six labeled solutions together.	**PREP** Fit filter papers to funnels and set them in jars.	**PREP** Set out a baking tray for the filters.	25 MIN **Activity 9 · Part 2**
15 MIN **Activities 1–2** ↳ Use one class before-and-after chart for both discussions.	15 MIN **Activity 3 · Parts 2–3: finish ★** Combine all three pairs; complete the results table and both individual responses.	10 MIN **Activity 5**	**SCHEDULE** Before Day 12, dry the solids: allow about an hour in a low oven, or the rest of the day and overnight in a warm sunny spot.	5 MIN **Activity 12**
15 MIN **Activity 3 · Parts 1–2: setup ★** Prepare the six solutions. Stop before combining them.	10 MIN **Activity 4** ↳ Complete as a class, recording the three variable answers together.	20 MIN **Activity 6 · Part 1** Complete filtration; keep each group's filter and solid for Day 11.	5 MIN **Activity 6 · Part 2** ↳ Answer the five observation questions as a class.	
			5 MIN **Activity 7** ↳ Explain one example, then partners explain the causes of the remaining changes.	
			10 MIN **Activity 8 ★**	
			5 MIN **Activity 9 · Part 1** Transfer the filter papers to the drying tray.	

4. Weighing Matter

PHENOMENON QUESTION
When matter changes, does its weight change?

OUTCOME
I can explain what happens to the weight of two different substances before and after they are mixed.

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 13 · 30 MIN	DAY 14 · 30 MIN	DAY 15 · 30 MIN
PREP Prefill water jars. Load balloons with 1 tsp baking soda; set out recording tables and at least three scales.	**PREP** Prefill the water jars; set out sugar, vinegar and prepared balloons.	5 MIN **Activity 3 · Part 2 ★**
10 MIN **Activity 1** ↳ After the video, use partner explanations without a second round of whole-class sharing.	15 MIN **Activity 2 · Parts 3–5** Complete the sugar and vinegar stations and their Part 5 recording table rows.	5 MIN **Activity 4**
20 MIN **Activity 2 · Parts 1–2** ↳ Use prefilled jars to start with weighing. Complete the ice row of the recording table in Part 5.	15 MIN **Activity 3 · Part 1 ★** Draw all three bar graphs; leave the comparison questions for Day 15.	15 MIN **Activity 5 ★**
		5 MIN **Activity 8**