



## 6-8 Climate Action Project-Based Learning — Weekly Lesson Plan

GRADE LEVEL

6-8

SUBJECT

Climate Action Project-B...

WEEK OF

\_\_\_\_\_

### Unit Overview

A five-session project sprint where students audit one real climate footprint at school (food waste, lights, single-use plastics, transit, paper), design one specific intervention, prototype it, measure it for two days, and pitch it on Friday to a real decision-maker (principal, head custodian, cafeteria manager, PTA). The deliverable is a 1-page proposal + a 2-minute pitch.

### Standards Alignment

NGSS MS-ESS3-3, MS-ESS3-5; UN Sustainable Development Goal 13

### Global Standards Mapping

**United States:**

NGSS MS-ESS3-3, MS-ESS3-5; UN Sustainable Development Goal 13

**United Kingdom:**

Key Stage 3 (Years 7–9, ages 11–14)

**Australia / NZ:**

Years 7–8 (AC v9.0) · NZ Levels 4–5

**IB Programme:**

MYP — Years 1–3 (ages 11–14)

**Canada (Ontario):**

Ontario Intermediate Division (Grades 7–8)

**Singapore / India:**

MOE Secondary 1–2 · NCERT Classes 6–8

*EU/EEA note: EU/EEA: GDPR-compliant — no student PII collected; teacher use only*

### Companion Student Handout — ready to photocopy

Each lesson plan ships with a separate "Student Edition" PDF — daily I-can goals, vocabulary blanks, work space, and exit-ticket boxes. No teacher prep. Print and hand out.

# Session 1

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## Learning Objective

Students will be able to choose a climate-impact category for their team and write a measurable baseline question.

## Standards Alignment

NGSS MS-ESS3-3; UN SDG 13.3

## Materials Needed

- Category cards (food waste, lighting, single-use plastics, transit, paper)
- Baseline-question template
- Clipboards

## Lesson Flow

### Opening / Hook (5-10 min):

Show a 90-second clip on cafeteria food waste in a real school. "How much do you think gets thrown out here on Tuesday?" Quick guesses on the board.

### Direct Instruction (15-20 min):

Project frame: pick a category! measure! propose ONE change! measure again! baseline question measurable in 2 days.

### Guided Practice (10-15 min):

Triads pick a category and draft a baseline question. Teacher pushes specificity: not 'How much paper do we use?' but 'How many sheets of paper get printed and tossed unused in our classroom Mon-Tue?'

### Independent Practice (10-15 min):

Each team finalizes its question and a one-paragraph plan: who measures, when, what tool.

### Closing / Exit Ticket (5 min):

Public commitment: each team posts its question on the wall.

## Differentiation

### For struggling learners:

Provide a partially-completed organizer with the first row modeled and 2-3 sentence stems specific to climate.

### For advanced learners:

Add a transfer prompt: apply today's idea to a context outside climate and defend the move in 3 sentences.

### For ELL students:

Pre-teach 4 key terms with a visual glossary; offer the sentence frame "I notice that \_\_\_\_, which suggests \_\_\_\_ because \_\_\_\_."

### For IEP students:

Reduce the response set by half; offer choice between a written, oral (recorded on Flip), or sketch response — same rubric.

# Session 2

6-8 Climate Action Project-Based Learning — Weekly Lesson Plan

## Learning Objective

Students will be able to collect a baseline measurement and convert it into a meaningful comparison (per-person, per-week, per-year).

## Standards Alignment

NGSS MS-ESS3-3; CCSS 6.RP.A.3

## Materials Needed

- Measuring tools per category (kitchen scale, paper count, light-on tally sheet, transit survey)
- Calculator

## Lesson Flow

### Opening / Hook (5-10 min):

"A number alone doesn't move anyone. Make it real." Show 'we waste 3 lbs of food a day' vs '3 lbs/day = 540 lbs/year = a small car's weight'.

### Direct Instruction (15-20 min):

Mini-lesson on per-person + scale-up math. Two worked examples.

### Guided Practice (10-15 min):

Teams collect their baseline (during the lesson if classroom-bound; over today and tomorrow if cafeteria/transit).

### Independent Practice (10-15 min):

Each team computes per-person and per-year scale-up; writes one 'so what' sentence.

### Closing / Exit Ticket (5 min):

Whip-around: each team shares the most surprising number.

## Differentiation

### For struggling learners:

Provide a partially-completed organizer with the first row modeled and 2-3 sentence stems specific to climate.

### For advanced learners:

Add a transfer prompt: apply today's idea to a context outside climate and defend the move in 3 sentences.

### For ELL students:

Pre-teach 4 key terms with a visual glossary; offer the sentence frame "I notice that \_\_\_\_, which suggests \_\_\_\_ because \_\_\_\_."

### For IEP students:

Reduce the response set by half; offer choice between a written, oral (recorded on Flip), or sketch response — same rubric.

## Homework (optional)

Finish data collection if needed by tomorrow morning.

# Session 3

6-8 Climate Action Project-Based Learning — Weekly Lesson Plan

## Learning Objective

Students will be able to propose one specific, low-cost, this-month intervention with predicted impact.

## Standards Alignment

NGSS MS-ETS1-1; SDG 13.3

## Materials Needed

- Intervention-design template (problem, solution, cost, who, when, predicted impact)
- Examples of student interventions from other schools

## Lesson Flow

### Opening / Hook (5-10 min):

Show three student interventions from real schools (lights-off champion, paper-tray, share-table). Name what makes each one feasible.

### Direct Instruction (15-20 min):

Walk through the template. Push on 'specific': not 'use less paper' but 'install a one-side-printed reuse tray on the printer'.

### Guided Practice (10-15 min):

Teams draft their proposal using the template.

### Independent Practice (10-15 min):

Predict impact: if our intervention works at 50%, the per-year savings = \_\_\_\_.

### Closing / Exit Ticket (5 min):

Peer-critique with one rule: 'Could you start this Monday with what we already have?' If no, sharpen it.

## Differentiation

### For struggling learners:

Provide a partially-completed organizer with the first row modeled and 2-3 sentence stems specific to climate.

### For advanced learners:

Add a transfer prompt: apply today's idea to a context outside climate and defend the move in 3 sentences.

### For ELL students:

Pre-teach 4 key terms with a visual glossary; offer the sentence frame "I notice that \_\_\_\_, which suggests \_\_\_\_ because \_\_\_\_."

### For IEP students:

Reduce the response set by half; offer choice between a written, oral (recorded on Flip), or sketch response — same rubric.

# Session 4

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## Learning Objective

Students will be able to prototype and test their intervention for one day and revise based on data.

## Standards Alignment

NGSS MS-ETS1-3; SDG 13.3

## Materials Needed

- Intervention-specific materials
- Same measuring tools as Session 2
- Revision log

## Lesson Flow

### Opening / Hook (5-10 min):

"Today we run version 1. It will not work perfectly. That's the point."

### Direct Instruction (15-20 min):

Set the rule: 1 day of run, then look at the data, then make ONE change. Show a revision log template.

### Guided Practice (10-15 min):

Teams deploy and start measuring.

### Independent Practice (10-15 min):

Mid-day check: what's working, what isn't, what's the one change?

### Closing / Exit Ticket (5 min):

Each team logs one revision they'll make tomorrow.

## Differentiation

### For struggling learners:

Provide a partially-completed organizer with the first row modeled and 2-3 sentence stems specific to climate.

### For advanced learners:

Add a transfer prompt: apply today's idea to a context outside climate and defend the move in 3 sentences.

### For ELL students:

Pre-teach 4 key terms with a visual glossary; offer the sentence frame "I notice that \_\_\_\_, which suggests \_\_\_\_ because \_\_\_\_."

### For IEP students:

Reduce the response set by half; offer choice between a written, oral (recorded on Flip), or sketch response — same rubric.

# Session 5

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## Learning Objective

Students will be able to pitch their intervention in 2 minutes to a real decision-maker, with baseline + projected impact.

## Standards Alignment

CCSS SL.6.4; SDG 13.3

## Materials Needed

- 1-page proposal template
- Phones for recording (or live audience)
- Pitch rubric

## Lesson Flow

### Opening / Hook (5-10 min):

Show the 2-minute structure: problem (15s), evidence (30s), solution (45s), ask (30s).

### Direct Instruction (15-20 min):

Demo a strong vs weak pitch — same content, different delivery. Name two moves that made the difference.

### Guided Practice (10-15 min):

Teams polish 1-page proposal + pitch script.

### Independent Practice (10-15 min):

Live pitch to invited decision-maker (or to a panel of teachers if external guest unavailable).

### Closing / Exit Ticket (5 min):

Decision-maker responds; teams capture follow-up actions.

## Differentiation

### For struggling learners:

Provide a partially-completed organizer with the first row modeled and 2-3 sentence stems specific to climate.

### For advanced learners:

Add a transfer prompt: apply today's idea to a context outside climate and defend the move in 3 sentences.

### For ELL students:

Pre-teach 4 key terms with a visual glossary; offer the sentence frame "I notice that \_\_\_\_, which suggests \_\_\_\_ because \_\_\_\_."

### For IEP students:

Reduce the response set by half; offer choice between a written, oral (recorded on Flip), or sketch response — same rubric.



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