Name: _____ **Date:** _____

Section: _____

Plant Response Activity

How Plants See the Light

Phase 1: ENGAGE (8 minutes)

Getting Started: Open peebedu.com and navigate to Plant Response Simulator

Initial Observations: Start with the Phototropism tab Locate these components:

Quick Test: Drag the sun to the right side. What happens?

Predict: Why might plants need to bend toward light?

Essential Question: How do plants detect and respond to light to maximize their survival? _____

Phase 2: EXPLORE (18 minutes)

Part A: Phototropism Investigation

Experiment 1: Light Direction Test how light position affects plant growth.

Key Observations: The plant always bends _____ the light Purple auxin dots move to the _____ side More auxin = (faster/slower) growth on that side _____ New leaves grow facing _____

Part B: Photoperiodism Investigation

Switch to Photoperiodism tab.

Experiment 2: Day Length and Flowering

(Write '`Flowers or No flowers`' in each box)

Pattern Discovery:

- Chrysanthemum flowers when nights are _____ than _____ hours

- Tomato flowers _____ of day length

Phase 3: EXPLAIN (15 minutes)

Understanding the Science

Phototropism Explained:

Fill in the process:

Light hits plant → Light sensors detect it → Auxin hormone moves to _____ side →

Cells with more auxin grow _____ → Stem bends _____ light

Why This Matters:

- More light = More _____

- Better growth = More _____

How Plants Tell Time:

Plants have internal clocks that measure:

Three Types of Plants:

Draw the flowering pattern:

- ———

Plants

Voluntary?

Design Challenge:

Create the perfect growth chamber:

- Light color: _____ because _____

- Day length: _____ hours for _____

Exit Reflection:

Complete one:

- The most surprising thing I learned: _____

- I still wonder: _____

Key Vocabulary:

- **Phototropism:** Growth toward light
- **Auxin:** Plant growth hormone
- **Photoperiodism:** Response to day/night length
- **Short-day plant:** Flowers when nights are long
- **Long-day plant:** Flowers when nights are short
- **Day-neutral plant:** Flowers regardless of day length