After the Fire

Model how a habitat changes over time

BOT.5.3 "Construct a model using technology that illustrates the levels of succession within a habitat (e.g., graveyard exploration, forest fire area, or reclamation sites)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Number the four stages of the burned hillside as you find them in the passage. Underline one detail that shows how plants change conditions for a later stage.

A Hillside in Stages

1. After a wildfire crosses a pine hillside, black trunks and ash can make the ground look lifeless. Yet the soil often remains, holding roots, seeds, and fungi that survived underground. This is secondary succession, a shift in a community after a disturbance that leaves soil in place. In the first growing season, sunlight reaches the open ground. Grasses and fast-growing flowering plants may sprout from surviving parts or from seeds carried by wind and animals. These plants cover some exposed soil, slowing erosion. A useful model should begin with this damaged but living starting point, not with bare rock.

2. Over the next several years, shrubs and young pines can appear among the grasses. Their roots take up water and help hold the soil, while fallen leaves and needles add organic matter as they decay. Later, some trees grow tall enough to form a patchy canopy. As shade increases beneath them, many sun-loving plants become less common, while plants that tolerate shade may spread. The stages overlap: grasses can remain in openings even when trees are growing. A model should show both the order of change and one way an earlier stage affects a later one.

3. Imagine building the hillside model in a slide app. Make four numbered screens: the burned site with soil still present; the first grasses and flowers; shrubs and young pines; and taller trees above shade-tolerant plants. Keep the same hillside outline on every screen so viewers can compare what changes. Add arrows between screens to show time passing, and label one arrow 'more shade as trees grow' to show a cause, not just an order. These screens show a possible path, not a promise. If drought kills seedlings or another fire occurs, a later screen might look different.

2 ANSWER WITH EVIDENCE

Use the passage

1. In a digital model, what should appear on the first screen to show why this is secondary succession rather than a start on bare rock?

2. A model places taller trees before shrubs and young pines. How would you correct the order, and what would grow before both?

3. What could an arrow from the first grasses and flowers to a later stage show about the soil?

4. How could you change a later screen if drought killed many tree seedlings? Explain why that change belongs in the model.

3 YOUR TURN

Your own words

Create a three-panel succession model in a slide or drawing app for a vacant lot where mowing stops but soil remains. Sketch your model below with stage labels, plants, two labeled arrows, and one sentence explaining how a stage changes conditions for the next.

After the Fire

PART 1 · READ AND MARK

Number the four stages of the burned hillside as you find them in the passage. Underline one detail that shows how plants change conditions for a later stage. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	In a digital model, what should appear on the first screen to show why this is secondary succession rather than a start on bare rock?	**Show the burned hillside with soil still present. The soil may hold surviving roots, seeds, and fungi.**
2	A model places taller trees before shrubs and young pines. How would you correct the order, and what would grow before both?	**Place grasses and flowering plants first, then shrubs and young pines, then taller trees.**
3	What could an arrow from the first grasses and flowers to a later stage show about the soil?	**The plants cover exposed soil and slow erosion, helping keep soil in place as the community changes.**
4	How could you change a later screen if drought killed many tree seedlings? Explain why that change belongs in the model.	**Show fewer young trees or a delay in tree growth. Succession follows a possible path, and drought can change what grows.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1, Mowing stops: soil and short grass. Arrow to Panel 2, 'Seeds sprout and plants grow taller.' Panel 2, Early growth: tall grass and wildflowers. Arrow to Panel 3, 'Shrubs establish and shade increases.' Panel 3, Later growth: shrubs and young trees, with fewer wildflowers beneath them. Growing shrubs cast shade that makes it harder for sun-loving wildflowers to grow beneath them.

Accept other plausible plant sequences if soil remains and the arrows show changes over time. The digital model and paper sketch should agree.