

# PUZZLERS

## #27 | GRASSLAND BIOME



### Puzzle

Build a model of a grassland biome.

### Standards & Connections

NGSS.5-LS2-1, NGSS.MS-LS2-3

### Background:

The world's arid wild lands are also called rangelands. There are five main biome categories: grassland, shrubland, woodland/ savanna, tundra and alpine, and barren lands. Rangelands provide a vast array of resources, products, and values, including forage for livestock, habitat for wildlife, clean water, renewable energy, recreational opportunities, open space, and magnificent vistas.<sup>i</sup> Grasslands are comprised of at least 25% herb cover (usually a grass) and less than 25% shrubs and trees.<sup>ii</sup> Many farmers' and ranchers' livelihoods depend on stewarding the natural resources available on grasslands.

### Suggested Materials:

Access to internet, cardboard boxes, pizza boxes, colored paper, colored markers, scissors, glue, tape, other creative materials



#### IDENTIFY

Share the background information with the students, then share the puzzle to be solved. Determine constraints (e.g., time allotted, space, materials provided, etc.) and divide students into small groups.



#### IMAGINE

Ask a series of questions to help students brainstorm solutions to the puzzle. Encourage students to list all ideas – don't hold back! Before moving on, make sure each group selects a solution that fits within the constraints.

**Ask:** How can you can solve this puzzle? Which of your ideas can you build a prototype for given the constraints?



#### DESIGN

Students diagram the prototype, identify the materials needed to build the prototype, and write out the steps to take. Students describe the expected outcomes.

**Ask:** What steps will you take to create your solution? What do you expect your solution to look like and be able to do?



## CREATE

Students follow their design plan and build their prototypes. Monitor their progress and remind them about how much time they have.



## TEST & IMPROVE

Students evaluate their creation and compare it with the expected outcomes. Students seek areas of improvement and make changes where needed.



## SHARE

Students share their solution to the puzzle and communicate lessons learned.

**Ask:** What was your biggest takeaway? What would you do differently?

## Additional Resources:

For more background information on this topic, please visit [www.purpleplow.org](http://www.purpleplow.org).



**Build models for the other biomes: Shrubland, woodland and savanna, tundra and alpine, and barren land.**

---

<sup>i</sup> Wrangle. (2018). Rangeland biomes. Retrieved from <https://wrangle.org/>

<sup>ii</sup> Wrangle. (2018). Grassland. Retrieved from <https://wrangle.org/biome/grassland>