

LESSON 24

Hitching a Ride

OBJECTIVES

Students will be able to identify some of the ways that weeds spread by seed.

METHOD

Students use toy vehicles in a model landscape to examine how seeds can be carried by vehicles, boats, and other means, promoting the spread of undesirable plants to new locations.

MATERIALS

- ☞ Samples of several local weeds including roots and seeds
- ☞ Plastic tub or wading pool with bottom covered with a layer of soil brought in from the local surroundings
- ☞ Water
- ☞ Small toy vehicles and boats with tread similar to ATVs, 4-wheel drive vehicles, mountain bike tires or other wheeled recreational vehicles
- ☞ Hiking boot (optional)
- ☞ Knapweed seedheads/seeds (can be collected in late fall/winter) and trash bags for safe weed disposal OR poppy or lettuce seeds and some celery or lettuce leaves to represent weed seeds and leaves

BACKGROUND

All plants reproduce. Plants reproduce by seed or vegetatively from plant parts. Most plants can reproduce from seeds, which are formed when flowers are pollinated. The spread of weeds along roads and trails is often caused by recreationists unknowingly, as seeds are caught in the tread of tires or boots and carried to new locations.

PROCEDURE:

1. Start the lesson by asking students to observe several types of weed seeds that can germinate and grow, in addition to weed plant material (i.e. small plants with roots) that can continue growing if moved from one location to the next.
2. Ask students to spread knapweed seeds and plant material (or alternatively use small garden seeds and vegetable leaves to represent weed seed and leaves) throughout the soil you have provided. Dampen half of the area to make comparisons between moisture conditions as observations are made.
3. Provide a variety of toy vehicles and ask small teams to take turns “driving” their vehicles through dry areas and through moist areas. Have them check their tires and other parts of the toys to see if any seed or plant materials have been

Grade level: K-3

Subject Areas: Biology

Duration: 30-45 minutes

Setting: Indoors

Season: Any

Conceptual Framework Topics:

Plant reproduction,
plant populations and
demography, invasion
ecology, human factors

Extensions

Collect the materials that stick to the wheels and vehicle parts as the toy vehicles moved through the areas, and allow students to further investigate the material sticking to the vehicles to find seeds and other plant material. Use this as a springboard for students to design their own investigations using the toys, seeds and plant material, such as how does driving or walking through wet or dry soil, or sand vs. mud compare for transporting the most weed seed and material?

picked up. As an option, you can also demonstrate with a hiking boot how seeds and other plant materials can be picked up and carried in the tread of the boot to new locations.

4. Guiding the discussions with the following questions may help students discuss what is happening:

- Do you see anything sticking to your tires?
- Do the vehicles with big tread catch more or less on them than the ones with smoother tires?
- Compare the dry and wet areas – does one or the other result in more material sticking to the tires after you play with the toys?
- Can plants move this way in the real world? If so, how?
- If the plants and seeds are moved to places that do not already have these plants in them, what do you think will happen?
- Do all seeds turn into plants? Why or why not? What are some of the things that can keep a seed from becoming a plant?
- What do seeds need to grow?
- What are some other ways that seed and plant material can get to other places? (Possible answers: wind, water, animals, sticking to clothing, etc.)

5. If weed seed and material were used, the cleanup is critical so as not to inadvertently spread weeds. Use this opportunity to discuss with your students how they think they should dispose of the soil or sand used. Be sure all material is thoroughly washed off of the toys and boots, and disposed of in sealed garbage bags. As an alternative, use seeds and plant materials that are not a concern. Examples are listed in the materials section.