Nature Journal—How Seeds Travel

November 14

A curious thing is happening in my schoolyard this year. I cannot believe how many acorns there are under the oak trees. The ground is covered with them. The last few years there weren't this many. In fact, I don't really ever remember seeing this many acorns in a single year. What is going on?

I checked all the oak trees in my schoolyard and near my house. I found the same thing. I knew I needed to find out more. So I walked to my friend's house. Again, I found an unbelievable number of acorns. Then I remembered that my uncle has a lot of trees near his house. He lives about 4 hours away from me, so we e-mailed each other. Here's his reply.

Hi,

It's great to hear from you. I've got to admit, I wasn't really paying attention to the acorns this year. The squirrels and blue jays are busy eating, burying, and collecting them, and there aren't many on the ground. So I'd say we have a normal number of acorns this year. But 3 years ago my oak trees created an overwhelming number of acorns. This was true for all of the trees in my area of the state. Let me know what you figure out, my little nature detective!

Love,
Uncle Jim

Why are all the oak trees around here producing so many acorns?

I asked my teacher, and she suggested I go to the library. The librarian was almost as excited as I was. She actually said to me, "The squirrels don't even know what to do with all the acorns in my yard this year!" After a short search, we found a book about trees. We reviewed the index and went to a page about oak trees. This is what we found out. Some oak trees produce acorns every other year instead of every year. Other oak trees produce very large crops of acorns every 4 to 10 years. These same trees produce smaller crops of acorns in other years.

The book went on to say that in years when the trees produce smaller crops, the trees might have damage from insects or bad weather. In those years, the squirrels and other animals are able to eat most of the seeds. When the trees produce lots and lots of seeds, it is called a **mast year**. During a mast year, they all produce a greater number of seeds. This gives the oak trees a better chance to reproduce. During mast years, the animals that eat and store the seeds for winter can't collect all the seeds. They leave many seeds to grow into trees.

Now that the acorn mystery is solved, I've started looking around a little more carefully at how many seeds plants create. Seeds are everywhere! The maple trees have seeds that twirl away from the adult plant. A strong breeze can send hundreds, maybe thousands, of dried twirlers out away from the parent plant.

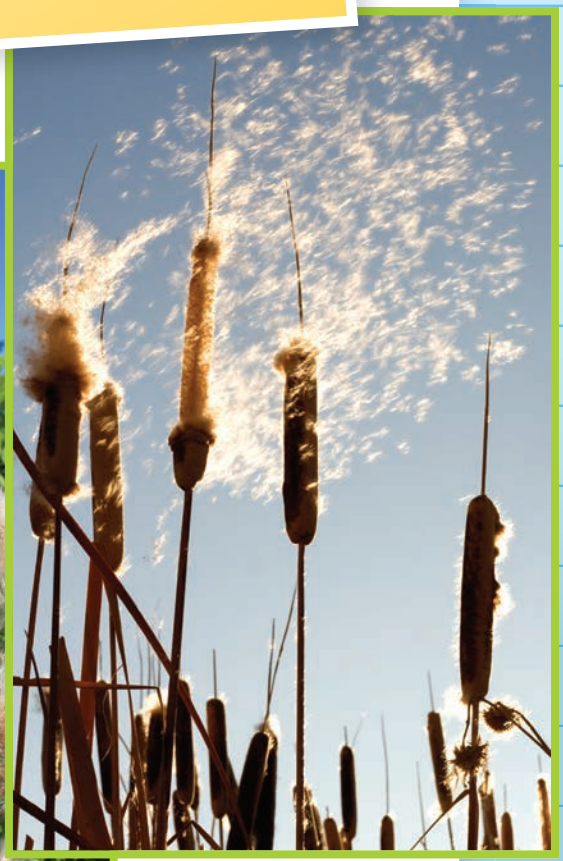
A dandelion puff ball has about 50 parachuting seeds. My brother and I once had a contest to see whose dandelion seeds stayed in the air longer. I won! One of mine traveled up into the air and out of our sight. My mom wasn't too happy with this game. She said, "Stop! You're blowing the seeds of weeds everywhere." I guess she didn't want weeds all over our yard. I think she forgot that the wind could do the same thing.

The chain-link fence at the far end of the schoolyard is covered in berries that birds love to eat. I've heard that birds will digest the fruit of the berry. Then the seed will pass in their droppings and might produce a new plant if it lands on warm, moist soil.

It's no wonder so many weeds grow in our schoolyard garden beds. Seeds have so many different ways to travel, are so plentiful, and are everywhere. That's what I've discovered about seeds in my schoolyard. What can you discover in yours?

Thinking about How Seeds Travel

Look at these pictures. How do you think these seeds travel away from their parent plants?



Glossary

adaptation any structure or behavior of an organism that allows it to survive in its environment

antenna (plural **antennae)** the thin feeler on the head of an animal like a crayfish, an isopod, or an insect

aquatic referring to water

behavior the actions of an animal in response to its environment

beneficial good or advantageous

biologist a scientist who studies living organisms

camouflage an adaptation that allows an organism to blend into its environment

carapace a hard outer shell that covers the main part of the body of an animal

carnivore an animal that eats only animals

cartilage the smooth, flexible material that connects some bones and gives shape to some body parts

chromosome a structure that carries genes

chrysalis the hard-shelled pupa of a moth or butterfly

contract to become smaller or shorter in length

cotyledon the plant structure that provides the germinated seed with food

crustacean a class of mostly aquatic animals with hard, flexible shells

detrimental harmful or bad

DNA (deoxyribonucleic acid) a material that carries the genetic messages of heredity

dormant inactive or resting

egg the first stage in an animal's life cycle

embryo the undeveloped plant within a seed

endanger to be at risk of becoming extinct

environment everything that surrounds and influences an organism

evidence data used to support claims. Evidence is based on observations and scientific data.

exoskeleton any hard outer covering that protects or supports the body of an animal

fingerprint the ridges in your skin at the tip of your fingers. Arches, loops, and whorls are fingerprint patterns.

flower a plant structure that grows into fruit

food chain a description of the feeding relationships between all the organisms in an environment

fossil any remains, trace, or imprint of animal or plant life preserved in Earth's crust

fruit a structure of a plant in which seeds form

function an action that helps a plant or an animal survive

gastropod the family of snails

gene a message carried by a chromosome

generation a group of organisms born and living at the same time

genetics the study of how living things pass traits to their offspring

herbivore an animal that eats only plants or algae

hibernate when animals sleep through the winter

inherited trait a characteristic that is passed down from generation to generation

invasive an organism that thrives in a new area but causes problems to the organisms in that ecosystem

joint a place where two bones come together

leaf (plural **leaves)** a plant structure that is usually green and makes food from sunlight, water, and carbon dioxide

life cycle the sequence of changes or stages an organism goes through as it grows and develops

ligament tissue that connects bone to bone

mast year a year when trees produce a lot of seeds

mature fully developed

migrate when animals move from places with cold weather to places with warm weather

molt to shed an outer shell in order to grow

muscle tissue that can contract and produce movement

nutrient a material needed by a living organism to help it grow and develop

offspring a new plant or animal produced by a parent

omnivore an animal that eats both animals and plants

organism any living thing

paleontologist a scientist who studies fossils

parent an organism that has produced offspring

petrify to change into stone over a long period of time

pincer an animal's claw used for grasping

population all organisms of one kind that are living together

predator an animal that hunts and catches other animals for food

prey an animal eaten by another animal

proboscis a long, strawlike mouth

protect to keep safe

pupa the stage of an insect's life cycle between the larva and the adult stages

reproduce to have offspring

riparian along a river or stream

root the part of a plant that grows underground and brings water and nutrients into the plant

sediment pieces of weathered rock such as sand, deposited by wind, water, and ice

sedimentary rock a rock that forms when layers of sediments get stuck together

seed the structure in a fruit that holds the undeveloped plant, or embryo

stem any stalk supporting leaves, flowers, or fruit

structure any identifiable part of an organism

survive to stay alive

swimmeret a small, soft leg under the tail of a crayfish

tendon ropelike tissue that connects muscle to bone

terrestrial referring to land

thrive to grow fast and stay healthy