



# PLANT PARTS: ROOTS



**Illinois Extension**  
UNIVERSITY OF ILLINOIS URBANA-CHAMPAIGN

## OBJECTIVES

- LEARN THE PARTS OF A PLANT.
- LEARN SCIENTIFIC OBSERVATION SKILLS.

## MATERIALS

1 - KNEE-HIGH PANTY HOSE  
GRASS SEED  
SOIL  
RUBBER BANDS  
GOOGLY EYES (OPTIONAL)  
1 SHEET OF CARDSTOCK  
COPY PAPER

## GUIDING QUESTIONS

1. WHY DO PLANTS NEED ROOTS?
2. WHAT ARE THE DIFFERENT TYPES OF ROOTS?
3. WHAT DO THEY LOOK LIKE?

## CONCEPTS

- PLANTS NEED ROOTS
- ROOTS ANCHOR THE PLANT, ABSORB WATER AND MINERALS AND MOVE THEM TO THE STEM, AND STORE RESERVED FOOD.
- PLANTS CAN HAVE EITHER A TAPROOT OR A FIBROUS ROOT SYSTEM.

## FACTS

- TAPROOTS HAVE ONE MAIN ROOT THAT IS USUALLY THICK AND SWOLLEN. A CARROT IS AN EXAMPLE OF A TAPROOT.
- FIBROUS ROOTS ARE A BUNCH OF TINY BRANCHING ROOTS. THE GRASS SEED IN THIS KIT HAS FIBROUS ROOTS.
- ROOTS DON'T ALWAYS GROW UNDERGROUND IN THE SOIL. AERIAL ROOTS GROW ABOVE THE SOIL LINE. ORCHIDS AND SOME VINES LIKE POISON IVY ARE EXAMPLES OF PLANTS WITH AERIAL ROOTS.
- WE EAT A NUMBER OF DIFFERENT ROOTS. CARROTS, RADISHES, AND TURNIPS ARE THREE EXAMPLES.



## INTEREST APPROACH-ENGAGEMENT

SOME OPEN ENDED QUESTIONS:

- WHAT DO YOU THINK A PLANT'S ROOTS ARE FOR?
- ARE THERE ROOTS THAT WE EAT?
- WHAT ROOT IS BETTER AT STORING WATER? OR ENERGY?



### ACTIVITY 1: MAKING YOUR SEED HEAD

- PUT YOUR BAG OF GRASS SEED INTO THE NYLON.
- ADD THE BAG OF SOIL AND THEN TIE A KNOT IN THE NYLON.
- SHAPE IT INTO A BALL, IF NECESSARY.
- PINCH A "NOSE" (SMALL BALL OF SOIL) AND WRAP A RUBBER BAND AROUND THE NOSE TO HOLD IT IN PLACE.
- DECORATE IT WITH GOOGLY EYES AND ANYTHING ELSE YOU LIKE.
- LIGHTLY WATER THE HEAD. KEEP THE SOIL MOIST BUT NOT WET.
- OBSERVE DAILY AND RECORD FINDINGS IN YOUR JOURNAL.
- SEEDS SHOULD GERMINATE IN 5-10 DAYS DEPENDING UPON THE TEMPERATURE.

### ACTIVITY 2: MAKE YOUR GARDEN JOURNAL

- TAKE A PIECE OF CARDSTOCK AND FOLD IT "HAMBURGER" STYLE OR WIDTH-WISE.
- FOLD SEVERAL PIECES OF COPY PAPER THE SAME WAY.
- PUT THE CARDSTOCK ON THE OUTSIDE OF THE COPY PAPER TO ACT AS A COVER.
- KEEP TRACK OF YOUR PLANTS PROGRESS BY DRAWING PICTURES OF WHAT YOU SEE, AND WRITE DOWN DESCRIPTIONS AND MEASUREMENTS.

### OBSERVING THE ROOT SYSTEM:

- ONCE THE SEEDS GERMINATE, WATCH HOW THE ROOTS GROW IN THE SOIL.
- RECORD YOUR OBSERVATIONS IN YOUR JOURNAL.

### GIVING YOUR GRASS HEAD A "HAIRCUT":

- JUST LIKE MOWING YOUR LAWN, YOU CAN GIVE YOUR GRASS HEAD A "HAIRCUT," USING A PAIR OF SCISSORS. STYLE THE HAIR OF YOUR GRASS HEAD THE WAY YOU LIKE AND THEN WATCH IT GROW OUT AGAIN. AS LONG AS THE BALL OF SOIL IS KEPT MOIST IT WILL GROW FOR MONTHS.

LESSON PLAN CREATED BY WENDY FERGUSON, PROGRAM COORDINATOR