

# Hardberger's Arachnids

First let's put spiders in context: Spiders are Arthropods, often called 'Creepy Crawlies!' Arthropods include insects (e.g., ants and bees), arachnids (e.g., spiders), myriapods (e.g., millipedes and centipedes), and crustaceans (e.g., pill bugs). Now: Tap your forehead, elbow, knee. Can you feel the hard bone under your soft skin? Those bones are the parts of our skeletons that give structure to our bodies. Our skeletons are inside our skin, while arthropods have their 'skeleton' on the outside!

## ARTHROPODS

- exoskeleton=skeleton outside so they molt to grow
- no backbone
- jointed legs
- segments=body divided
- appendages=parts attached
- cuticle made from chitin
- grows by molting



Arthropods have (big word alert!) exoskeletons; that means that their skeletons (hard structures) are outside their bodies like a suit of armor. Their exoskeletons are made of a cellulose like material, chitin, and minerals. They also have bodies in segments (parts) and jointed (like our knee or shoulder) legs. There are appendages (like our legs and arms) or body parts, attached to the segments. There are several kinds of arthropods (segmented body, exoskeleton, segmented legs): **Arachnids**, **Insects**, **Crustaceans**, and **Myriapods**!

**ARACHNIDS:** The stars of this month have 8 legs, chelicerae (used for eating), pedipalps (used for bringing food to the mouth), 7 segments in each leg, 2 main body parts (cephalothorax=combined head and thorax, and abdomen), and 8 simple eyes in 2-3 rows, and notably, web-spinnerets.

**INSECTS:** These are some very well known and diverse arthropods, and they're EVERYWHERE. They have 6 legs, antennae, a variety of eyes, 3 main body parts (head, thorax, abdomen), and some even have unique features like WINGS!

**CRUSTACEANS:** The one's you'll see in the park - woodlice or Roly Pollies - are like other crustaceans that have long segmented body and segmented legs. Some other crustaceans also have claws and antennules (small antennae)

**MYRIAPODS:** These arthropods have very long segmented bodies and many many MANY legs. The ones you'll see in the park are Centipedes and Millipedes, of several varieties. Some are harmless, and others are fierce predators!

## 🕷️ SPIDER'S FACTS:

- Spiders are arachnids, but not all arachnids are spiders!
- Spiders generally have 8 eyes, 2 large and 6 small.
- Their 8 legs have 6 joints, and 7 segments.
- They have scopulate (brush-like tufts of hairs) pads on the bottom of their feet and generally 2 claws. They smell and taste with hairs on their legs and pedipalps!
- The hard shell made of chitin (hard substance) over the cephalothorax is the carapace.
- When they 'molt' to grow, the abdomen splits, and they crawl out of the old hard 'skin', soft and vulnerable.
- The abdomen has a thinner more flexible covering.
- They have chelicerae for "chewing" and pedipalps to hold, tear, and push food into their mouths. They usually spray the prey with digestive fluid first to soften it.
- The spinnerets (spigot and spout) make silk from liquid chains of amino acids. The two body parts are cephalothorax and abdomen. Lyriform organs (slits) pick up sensory signals.
- They can make up to 6 different kinds of silk, made from protein, and can be stronger than steel!



## Spider Life

Spiders are predators, which means they hunt, using webs, trapping, jumping and some can even hunt underwater! Wolf Spiders hunt on foot on the ground. Trap door spiders dig holes covered with dirt doors hinged with spider silk, ambush passing prey. **Some spiders hide inside flowers to surprise passing insects.** Spiders pounce, use bola threads and spit. Some spiders cast nets and some even eat small fish! Lastly, spiders can even defend themselves by 'throwing' their urticating [irritating] hairs to protect themselves!

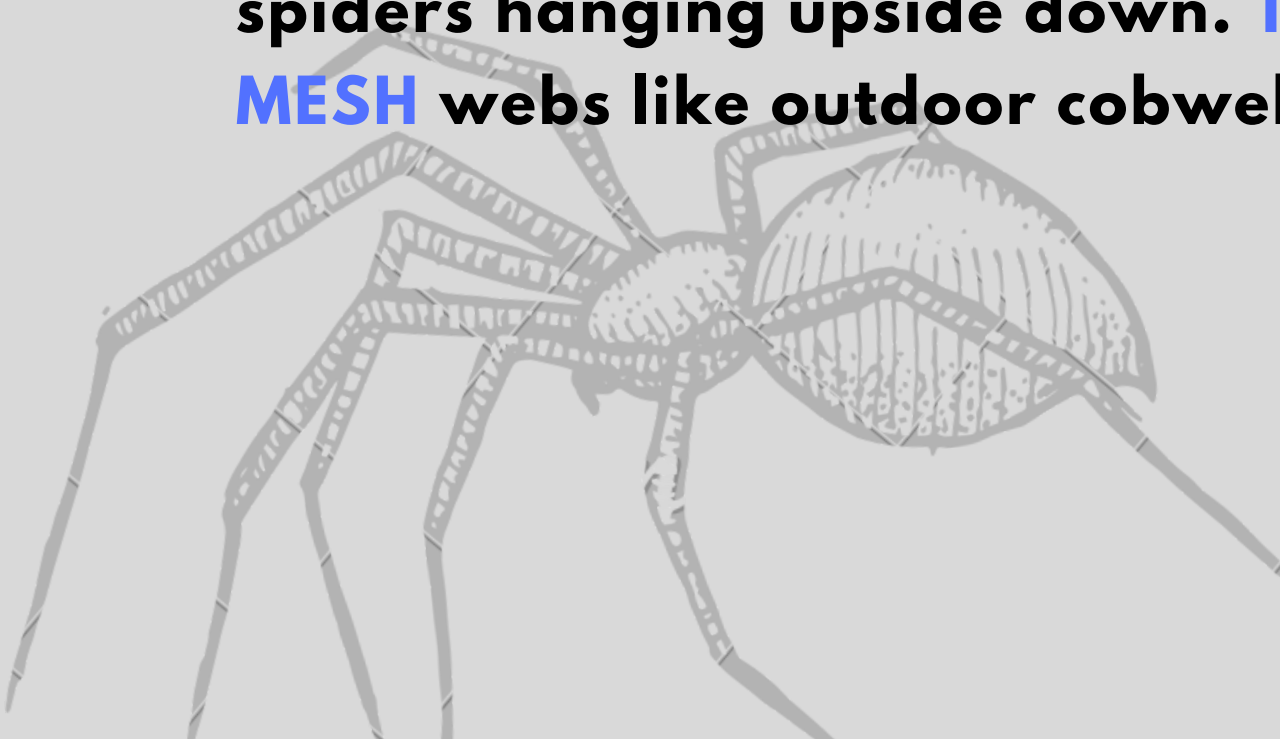


# THE TANGLED WEB

**OBSERVATION ACTIVITY**: Look for a spider's web in the park. Use the space below to draw the design of the spiderweb you see through observation and documentation! Based on the descriptions below, what kind of web is it? Next: add the spider if you see it, or make up your own spider if you don't see it!



There are 6 main types of webs spiders create to live in or on, and to catch prey with. **ORB** webs are good for catching flying insects. **TANGLE** webs are the cobwebs you find inside. **FUNNEL** webs are where spiders hide to ambush. **SHEET** webs often have spiders hanging upside down. **TRIANGLE** webs have fuzzy thread to entangle the prey. **MESH** webs like outdoor cobweb under rocks snare with their threads.



# SPIDER WEB CRAFT

MATERIALS NEEDED: SCISSORS, COLORS, GLUE, CONSTRUCTION PAGE

1

Color the Spider Template!

2

Cut out your spider template!

3

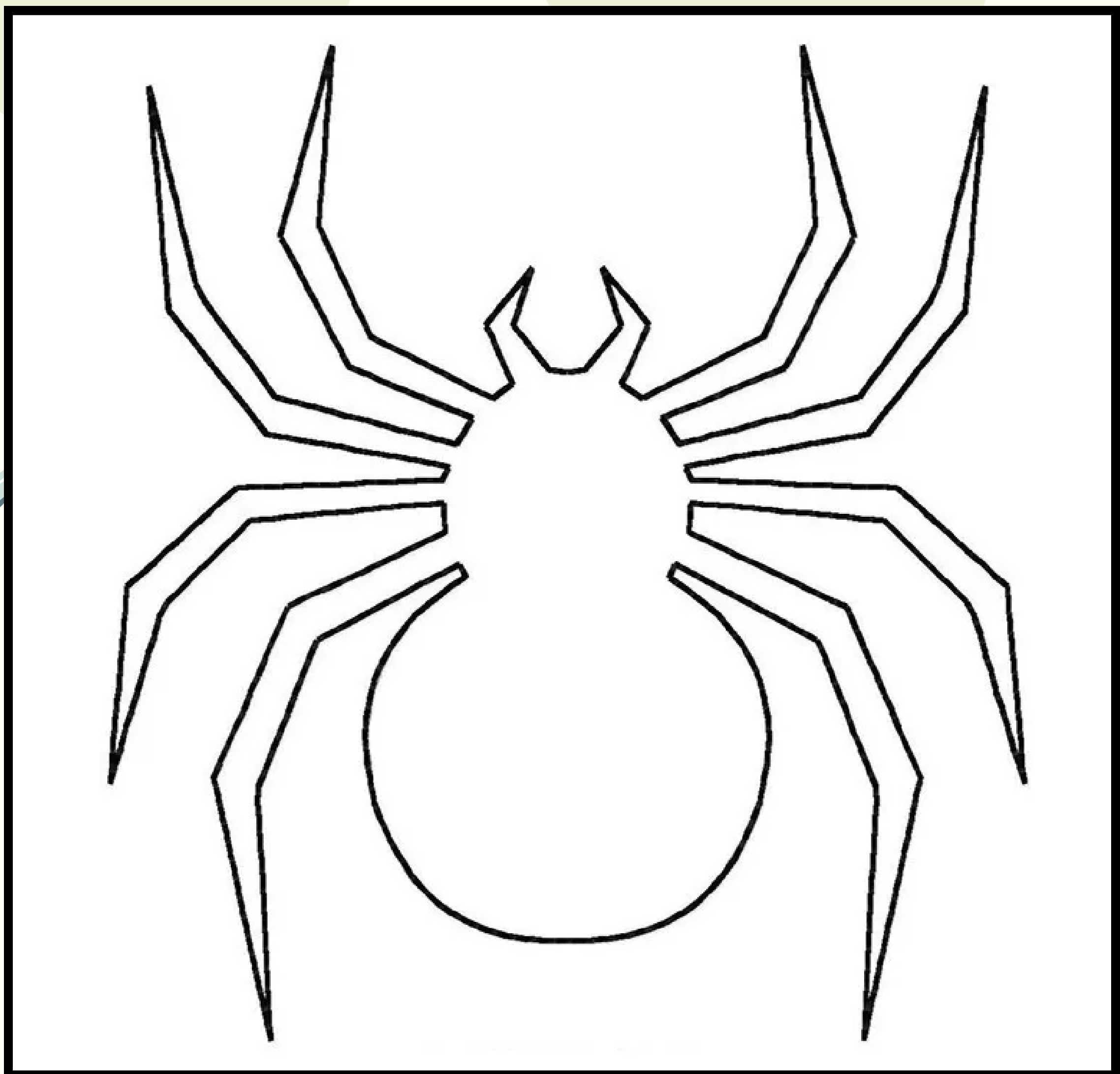
Glue your spider template to the construction paper page!

4

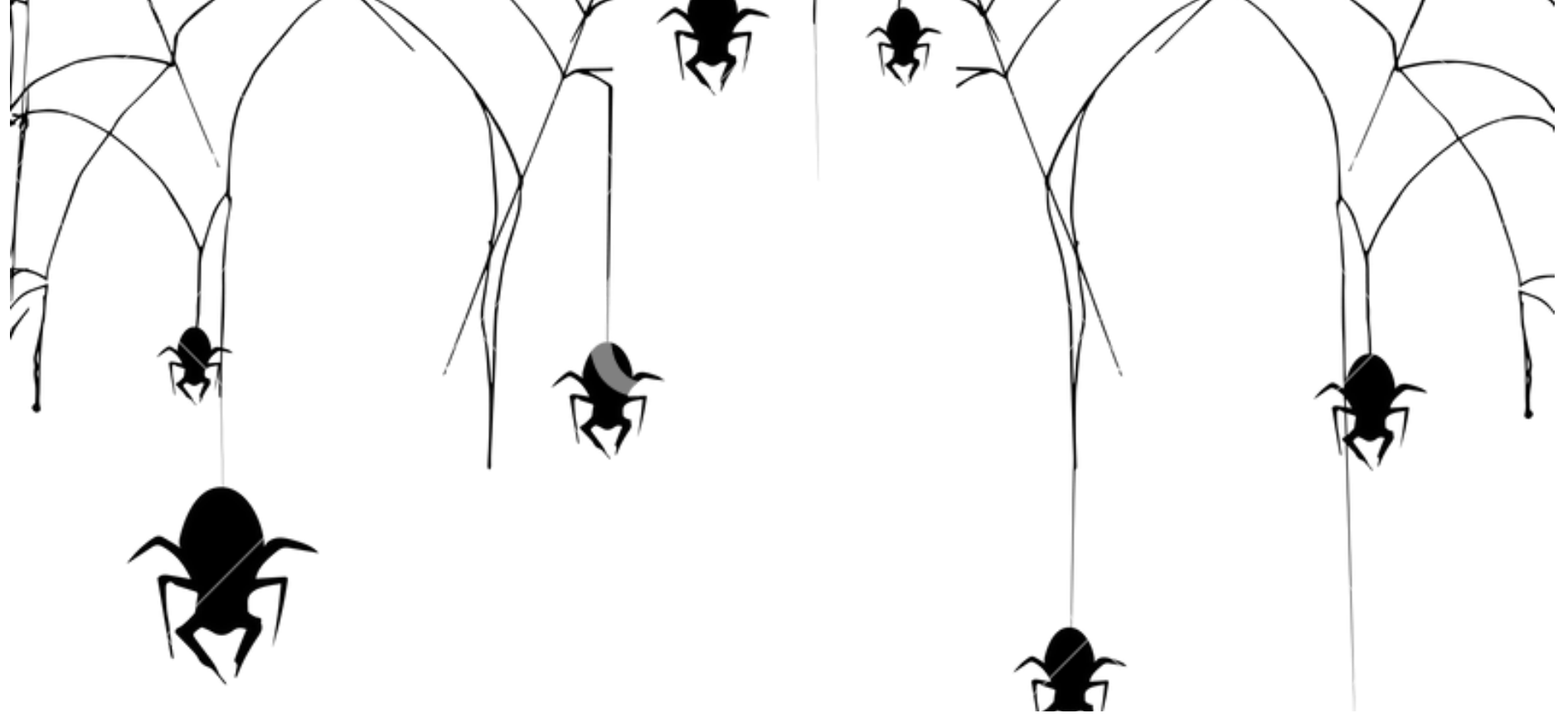
Cut the yarn into pieces for your web!

5

Glue your web over the spider on the page and let it dry!







## STRING CHEESE SPIDER'S

# WEB



### INGREDIENTS:

STRING CHEESE

### OPTIONAL:

OLIVES, GRAPES OR DRIED  
FRUIT OR NUTS FOR  
SPIDER AND PREY

### DIRECTIONS:

STRING CHEESE MAKES FOR A PERFECT EDIBLE  
WEB. SHRED YOUR CHEESE AND LAY IT ON YOUR  
PLATE LIKE A SPIDER'S WEB. THEN USE AN  
OLIVE OR GRAPE TO BE YOUR SPIDER. ASK A  
PARENT TO SLICE SOME LEGS TOO! ADD DRIED  
FRUIT FOR SPIDER'S PREY – OM NOM NOM! TO  
LEVEL UP THIS SNACK, TURN IT INTO A PIZZA!

