SOYBEAN LIFE CYCLES DISCUSSION GUIDE

Planting/Seed Bag or Envelope

* When do farmers plant soybeans? (spring, mid-April to late May)
* What do farmers plant to grow soybean plants? (seed)

Soybean Seed

* Where do farmers plant soybean seeds? (in soil, usually planted in farm fields that are rich and fertile, typical of the Midwest)
* What does the seed need to grow? (water and warmth from the sun)
* What happens next? (the seed starts germinates and starts to grow underground)

Germinating Seed

* What is the white part that is coming out of the seed? (the roots of the plant)
* How does the root come out of the seed? (the seed splits in half at the hilum and the root comes out)
* What happens next to the two seed halves? (they become the cotyledon leaves that sprout above ground)

Sprout

* What is this tiny plant called? (a sprout)
* What do the white strings at the bottom represent? (roots)
* What do roots do? (They take water and food from the soil to the plant. They also act like an anchor to hold the plant in the ground).
* What does the plant need to grow bigger? (sunlight, nutrients or food from the soil, and water)
* How have the roots changed since the roots of the germinating seed? (there are more of them and they have grown in length)
* What are the two leaves called on the sprout? (Cotyledon leaves which are formed from the two halves of the soybean seed)
* What happens next ?(the soybean plant grows taller)

Growing Soybean Plant

* How have the roots changed on the plant since it was a sprout? (they are bigger because the plant has grown and needs more water and nutrients)
* How tall do you think soybean plants grow? (three to four feet tall)
* What is the center part of the plant called that the leaves are attached to? (stem)
* What are the stems called that branch from the main stem and each hold three leaves? (petioles or leaf stems)
* How many leaves are on each leaf stem or petiole? (Each leave stem has three leaflets called a trifoliate leaf)
* What comes next after the plant has grown many stems and leaves? (flowers form)

Flower

* What color are soybean flowers? (they can be purple or white)
* How big are soybean flowers? (about the size of your pinky fingernail)
* What do the flowers contain? (pollen)
* What forms after the flowers? (small green bean pods )

Small Growing Soybean Pod

* What color are the pods when they are little? (green)
* What happens next? (the small green pods grow larger)

Large Green Soybean Pod

* What color are the pods as they grow? (green)
* What is growing inside of the green pod? (soybean seeds)
* What color are the soybean seeds when the pod is green? (light green)
* How many seeds are usually in each pod? (three to four)
* What shape are the green soybean seeds? (round or oval and flat)
* What happens next? (the flat, round soybeans become spheres and the pods turn brown).

Large Brown Soybean Pod

* Why are the soybean pods brown? (because they have dried up and stopped growing)
* Why do soybean plants dry up and turn brown? (The season changed. The days get shorter while the weather is getting colder)
* What season does this happen? (Fall)
* What is inside the brown pod? (tan soybean seeds)
* What do farmers do when the soybean plants have dried up and the pods have turned brown? (They harvest them.)