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| **Month** | **Lesson Descriptions** | **Goals**  | **Lesson strategies & resources** |
| September-order insects | a. prepare classroom for observationsb. Introduce observations, data collection, predictionsc. seed observation (pumpkins or lima bean) | -Introduce unit & scientific practice-Set norms for classroom discussion-Practice observations- Discuss living things-Introduce science notebook | * Science Talks can include observations of plants and animals. What do you notice? Why do you think that is? What questions do you have? What do you know about living things? What makes something living?
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| October | a. Live Animal Observation/data collection (mealworms or butterflies) c. Introduce animal as insectd. Choose seasons treee. seed sprouting (pumpkins or lima bean) | - students observe animals & their body parts-students observe seeds-Students ask questions-students begin to record observation in science notebooks-students begin to use evidence to support claims-students begin to see that living things have basic needs for survival | * Science Talks can include observations of plants and animals. What do you notice? Is the animal different to you? What are its parts?? What is your evidence? Why do you think that is? What questions do you have? How could you find the answer? What does a plant need to survive? How do you know?
* Read a louds: *Jack in the Beanstalk, From Seed to Pumpkin, Pumpkin Circle, Tops & Bottoms, Ugly Vegetable* (teacher tip: use as author study)
* Teacher tip: Plant seeds every year- Use the seeds from the previous year. Show students in the fall how the seed comes from the flower/fruit and see how it turns into a flower/fruit as it goes through its life cycle.
* Pumpkin & Bean songs & poems
* Teacher tip: Field trips to Ward’s Berry Farm, Natick Community Garden, Volante Farm,
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| November | a. Final butterfly/plant observation b. Introducing life cycle with modelsc. life cycle stages sortingd. data collection plants | - student observe animals & ask questions- students record observations in science notebooks-students see that living things have basic needs for survival- students begin to understand stages of life cycle | * Science Talks can include observations of plants and animals. What do living things need to survive? What changes have you observed? How do you know it’s changed? Are there patterns that all insects/plants have? Do you think this is a cycle? What is your evidence? What other cycles do you know?
* Bean estimation & sorting games
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| December | a. Continued observation (mealworm)b. observe seasons treec. egg laying animal research (turtles, arachnids, crustaceans, chickens)c. other animal observations (SC animals)  | - students record observations in science notebooks- students begin to see that not every individual completes a life cycle-Students begin to see that all living things have life cycles | * Science Talks can include observations of plants and animals. What cycles have you seen? What patterns have you observed in cycles? Do all animals have life cycles? What is your evidence? Do all living things complete an entire life cycle? How do you know?
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| January | a. Continued observation (mealworm)b. egg laying animal research(turtles, arachnids, crustaceans, chickens)c. other animal observations (SC animals) | - students record observations in science notebooks- students use evidence to support claims- students begin to compare and contrast life cycles | * Science Talks can include discussions of life cycles: How are animals similar/different? How are life cycles similar? What are the advantages of different kinds of life cycles?
* Life Cycle Games and Puzzles
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|  | **Lesson Description** | **Goals**  | **Lesson strategies & resources** |
| February | 1. Continued life cycle observation (mealworm)
2. Other animal observations(SC animals)
 | - students compare and contrast life cycles-Students see that all living things have life cycles, but not all living things complete a full cycle | * Science Talks can include can include discussions of life cycles: What are the advantages of different kinds of life cycles? Why do you think so? What is your evidence?
* Life Cyle Games and Puzzles
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| March | a. Continue data collectionb. Continued observation seasons treec. introduce seeds (lima beans or marigolds)d. Continued observation (mealworm) | * students observe parts of a seed
* students record observations in science notebook

- students understand stages of life cycle- students review how living things have basic needs for survival (and how seeds provide these needs for a plant) | * Science Talks can include observations of plants and animals. Based on other life cycles, what do you predict will happen with this animal/plant? Why do you think so? Do all living things need the same things? How do you know? What is your evidence?
* Read a louds/poems: *Jelly Bean Stew*
* Seed hunt
* Bean estimation & sorting games
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| April-order insects and frogs (if available) | 1. Live Animal Observation (ladybugs, butterflies or mantids or moths)
2. Introducing life cycle stages (Mealworm ladybugs, mantids or moths)
3. Seed sprouting (marigolds or lima beans) & data collection
 | - students compare different species’ life cycles- students begin to see seasonal changes in organisms- students use evidence to support claims | * Science Talks can include observations of plants and animals. Based on other life cycles, what do you predict will happen with this species? Why do you think so? Do all living things need the same things? How do you know?

How does the weather/seasons impact plants and animals? How do you know? |
| May | a. Continued observation of live animal (ladybugs, butterflies or mantids or moths)b. observation of Aphids (ladybugs only)c. plant data summary (marigolds or lima beans) | -students record observations in science notebook-students analyze data for specific information-students begin to see role of animal in ecosystem - students use evidence to support claims | * Science Talks can include analysis of data from plants and animals. What patterns can you see in the plant’s growth? Why do you think that is? What is your evidence? What questions do you have about the data? How could we find out? How does the weather/seasons impact plants and animals? How do you know?
* Resources: *What about the LadyBugs?* *LadyBugs*
* Teacher Tip: Museum of Science Live Animal Program- Life Cycles <http://www.mos.org/traveling-programs/life-cycles>
* Poems, songs
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|  | **Lesson Description** | **Goals**  | **Lesson strategies & resources** |
| June | a. Final observation of live animals and plants | - students record observations in science notebook- students analyze data for specific information- students see role of animals & plants in ecosystem- students use evidence to support claims | * Science Talks can include more analysis of data from plants and animals. Is this animal/plant important for other living things? How do you know?
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