

## Instructions for Parents (for K-5<sup>th</sup> grade students)

<b>Materials in this kit:</b> <ul style="list-style-type: none"><li>• Beans</li><li>• Ziplock bag</li><li>• Paper towel</li><li>• Booklet</li><li>• Pencil</li></ul>	<b>You will need to provide:</b> <ul style="list-style-type: none"><li>• Tape</li><li>• A sunny window</li><li>• Cup or bowl</li><li>• Water</li></ul>
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**Modifications:** K-1<sup>st</sup>: Please plan to help your child with the reading and writing. 2<sup>nd</sup>-3<sup>rd</sup>: Your child might need help with some vocabulary and reading. 4<sup>th</sup>-5<sup>th</sup>: Your child will need to be encouraged to do a thorough job. Ask, "is this your best work?" if they rushed through the activity.

### Lesson 1

- Talk with your child about how a bean is a seed. Remind them about what green beans look like. If you have them in the house, open a green bean (canned or fresh) and look at the unripe seeds in the pod.
- Look at one of the dry lima beans. Have the student make observations about the bean. How does it feel, smell, look? Ask them to record their answers.
- Drop the bean in a cup of water for one day.

### Lesson 2

- Take the lima bean out of the water. Talk with your child about what the bean looked like yesterday. Notice how it changed.
- Pull the bean in half. Compare what you see to the diagram. These are the parts of the bean defined for you:
  - Seed coat – the seed coat wraps the seed to keep it safe. This breaks apart as the seed begins to grow. Why does your child think it is called a "coat"? How do people use coats?
  - Cotyledon – the fleshy part of the bean. This provides the "food" or energy for the growing seed. This is what you first see poke above the surface of the soil when you grow beans.
  - Hypocotyl – The "baby" stem of the plant. It connects the radicle and the epicotyl.
  - Epicotyl – "Baby" or undeveloped first true leaves.
  - Radicle – "Baby" or undeveloped root of the plant.
- Have your child make notes, draw, and label their plant. Ask older students to make detailed drawings and add detail to their observations.
- *Optional:* If you can, cook dry or canned beans for a meal. Compare.

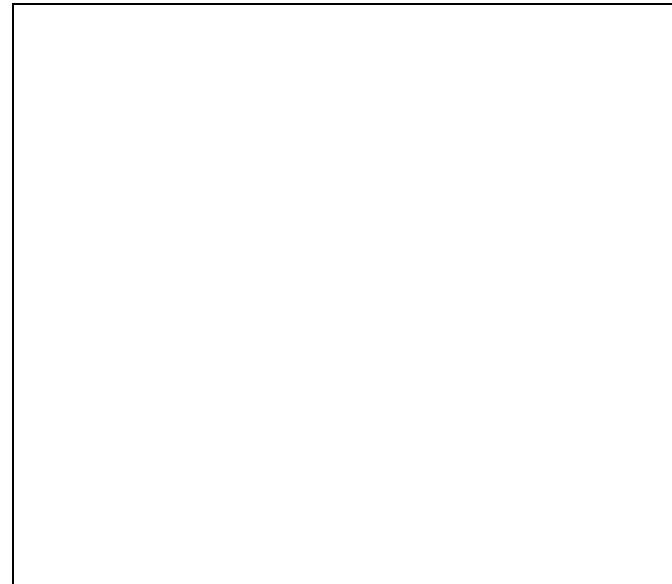
### Lesson 3

- Create a mini greenhouse for your window to watch a bean grow. Put water in the bag, so the bottom of the paper towel is wet. Place the rest of the beans above the staples. Tape the bag in a window that gets sun. Partially seal the bag shut, about 50% closed at the top. This will keep it moist inside of the bag.
- Have your child observe the bean and the bag and record what they see in the booklet.
- *Optional:* plant beans in soil & water. Compare how the beans grow differently.

### Ongoing

- Open the bag as the bean begins to grow.
- Keep the bottom of the paper towel in water to keep the bean moist.
- Have your child draw what they notice every day or every other day. Refer back to the diagrams to label their drawings. Talk about what you notice.
- Reflect on what you learned about how plants grow at the end.

## My Bean Book



Name: \_\_\_\_\_



with the Santa Fe Community Educators Network

**Lesson 1:** Today I soaked a bean in water. I observed my bean before it got wet:

It felt like: \_\_\_\_\_

It smelled like: \_\_\_\_\_

It looked like: \_\_\_\_\_

\_\_\_\_\_

**Lesson 2:** Today I took my bean out of the water. This is how it changed overnight.

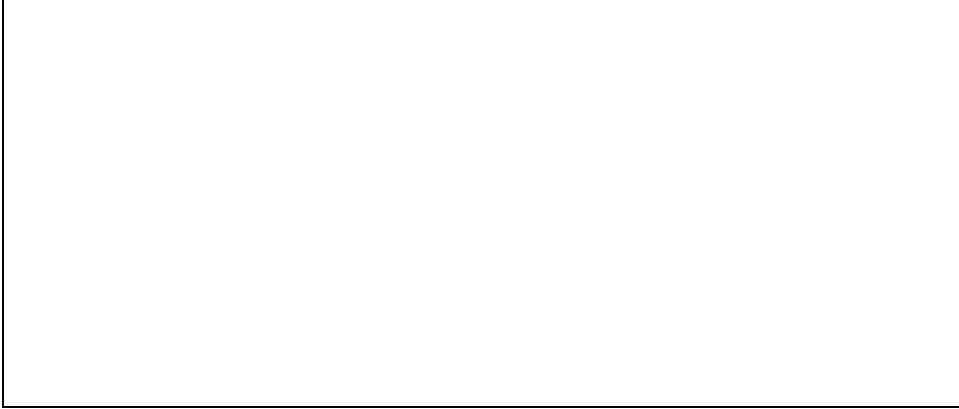
It felt like: \_\_\_\_\_

It smelled like: \_\_\_\_\_

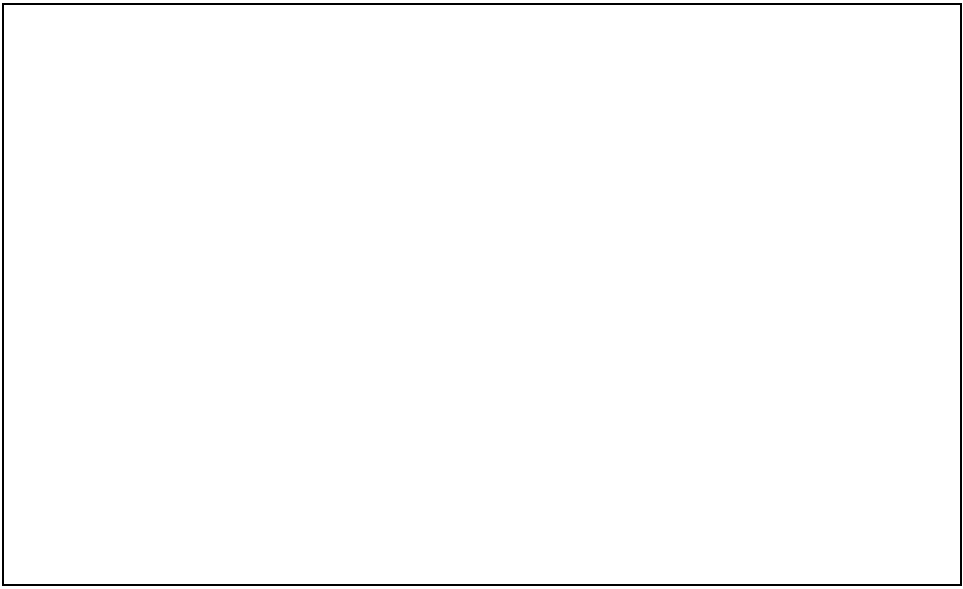
It looked like: \_\_\_\_\_

\_\_\_\_\_

Pull your bean in half. Draw and label a picture of your bean. This is what I see:



This is my bean on day\_\_\_\_\_.



What did I learn about how plants grow?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

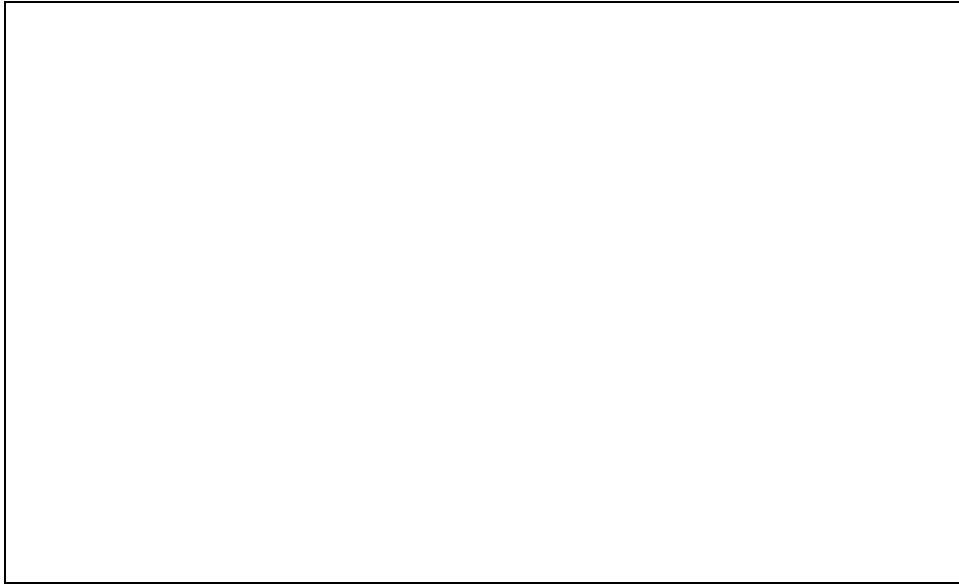
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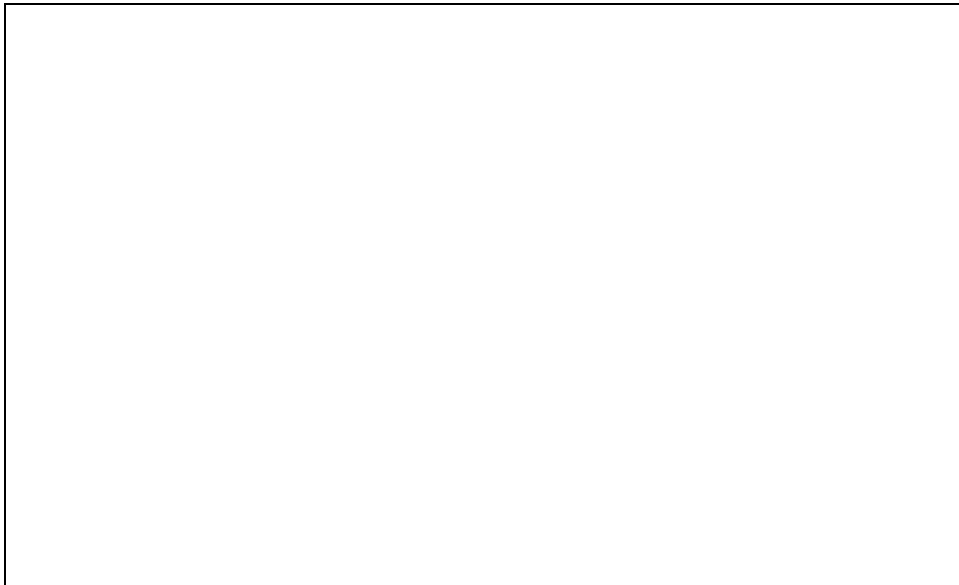
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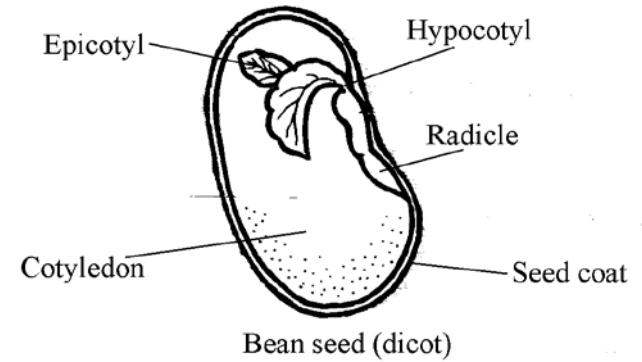
This is my bean on day\_\_\_\_\_.



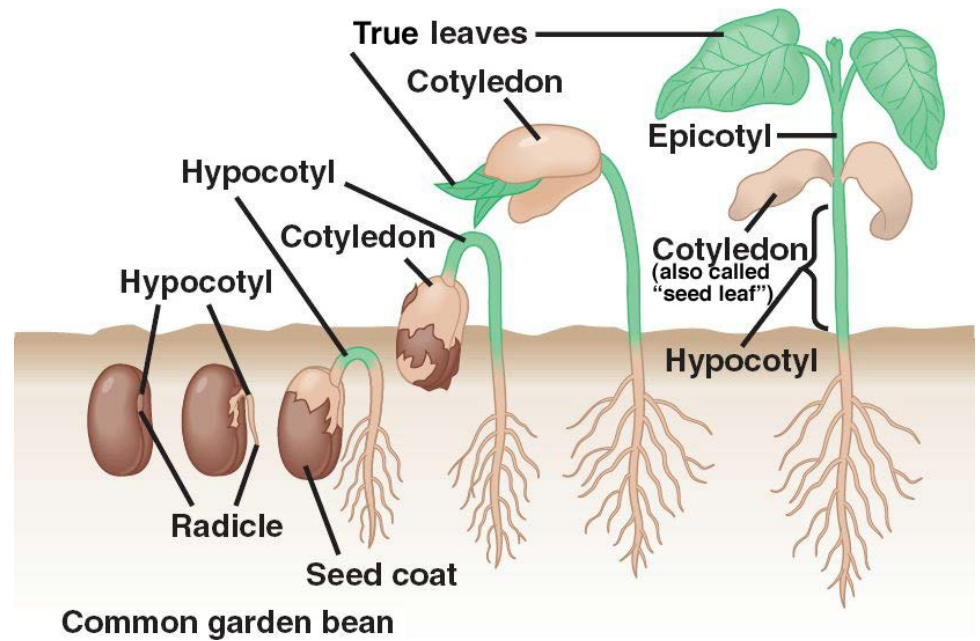
This is my bean on day\_\_\_\_\_.



The inside of a bean is interesting. This is a diagram of a bean seed.



This is how a bean grows.



**Lesson 3:** Today I put a bean in a plastic bag with paper towels and water. This is what I noticed:\_\_\_\_\_

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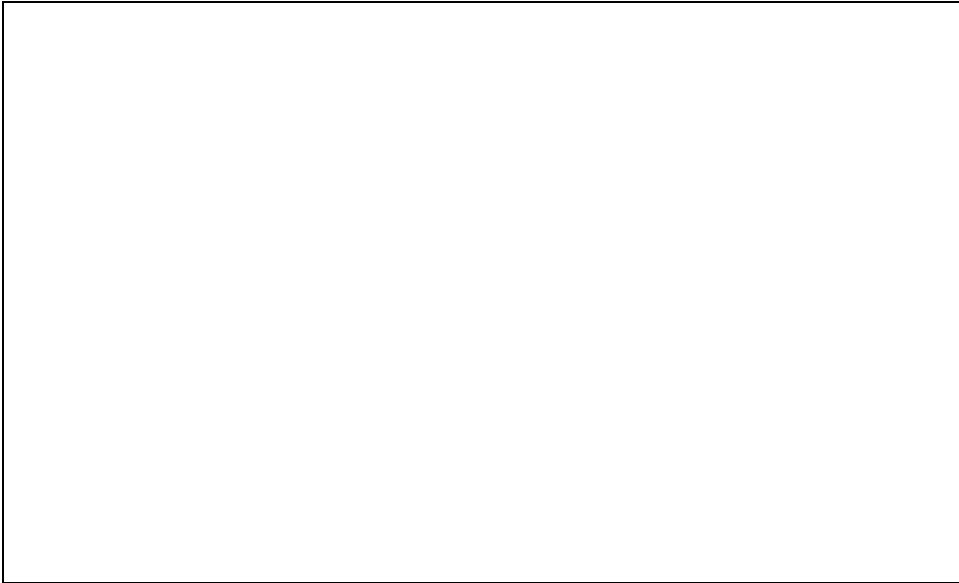
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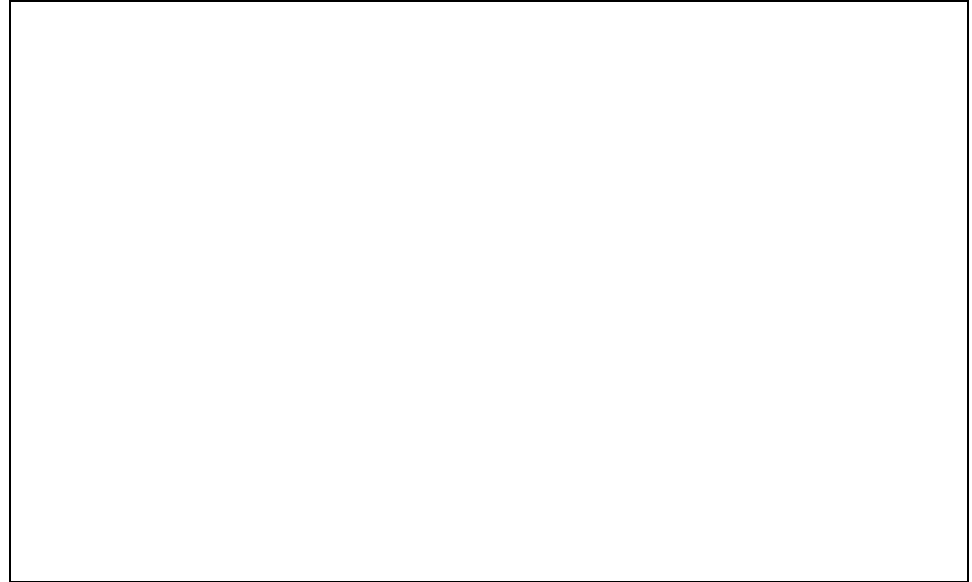
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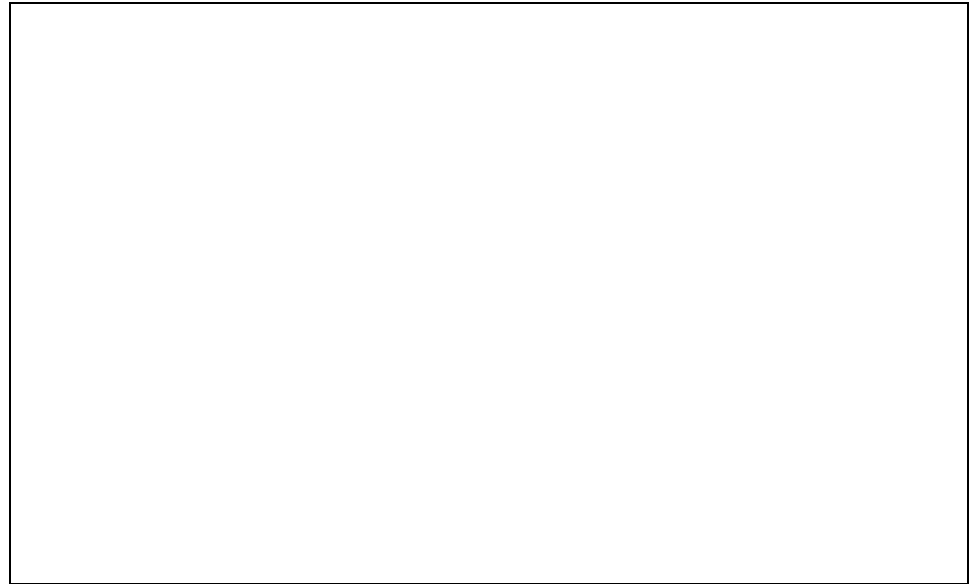


I will tape the bean in a bag in a sunny window. I will look at my bean and draw how it grows and changes.

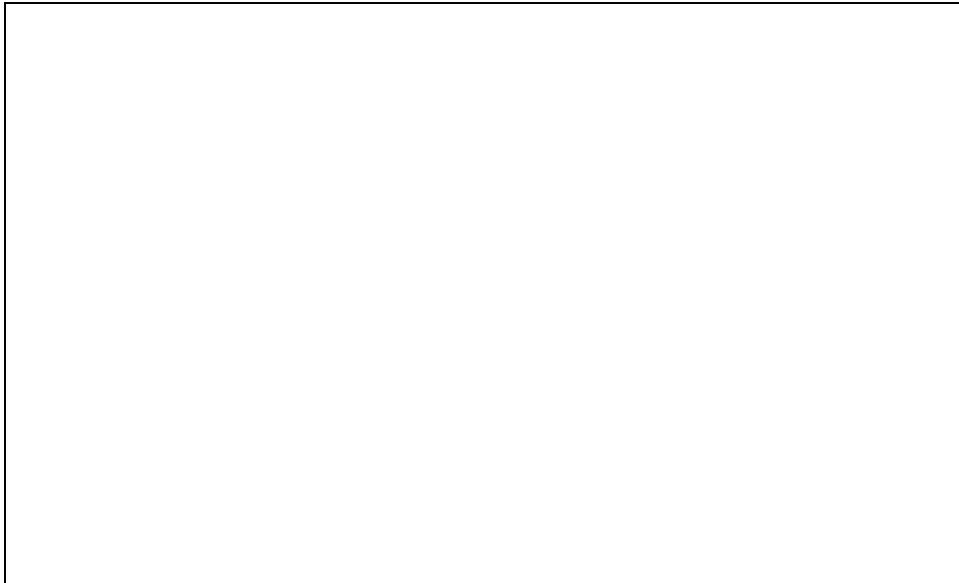
This is my bean on day\_\_\_\_\_.



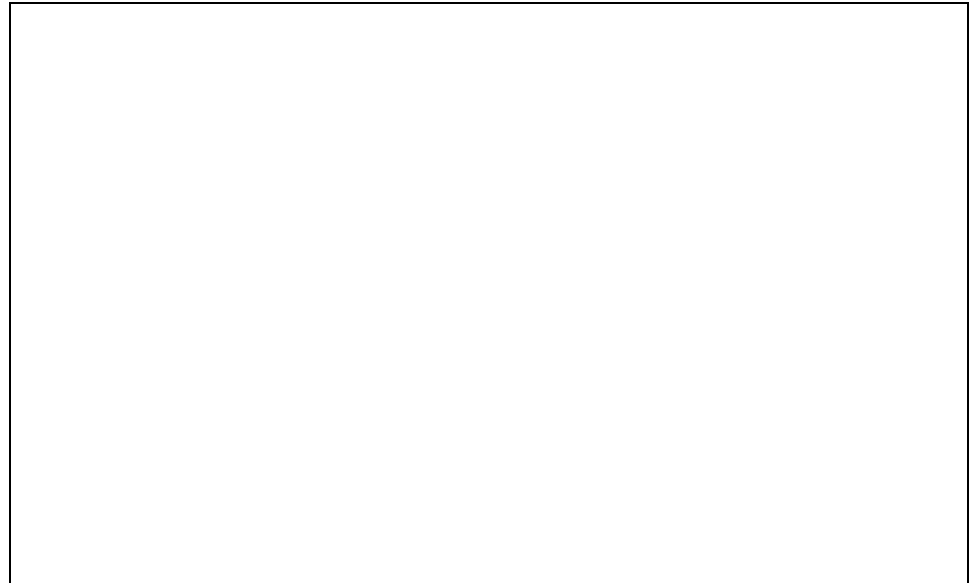
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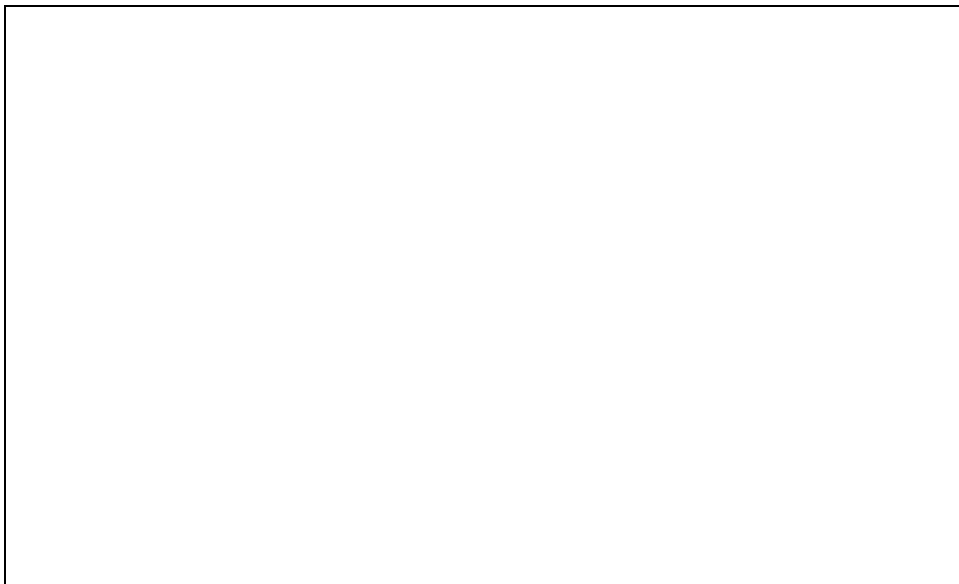
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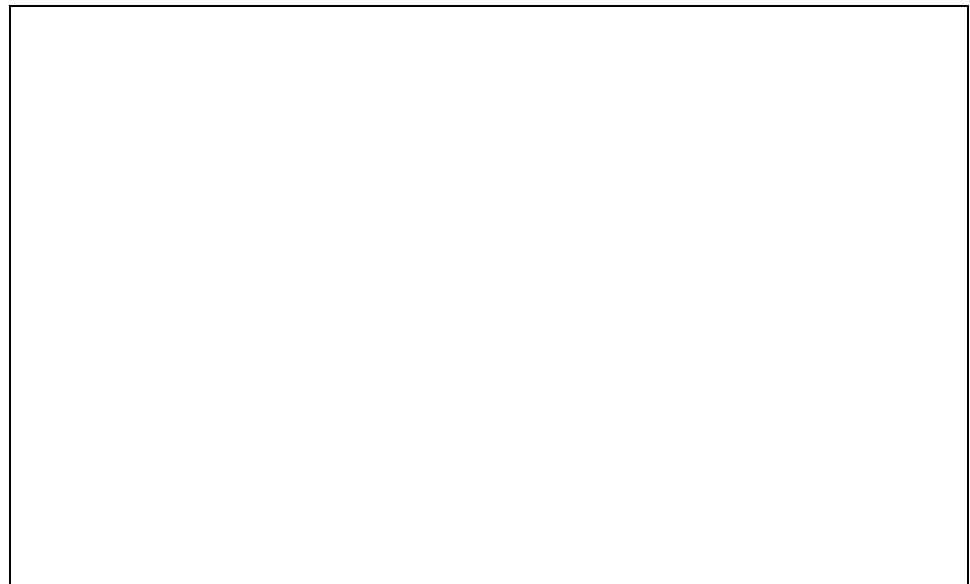
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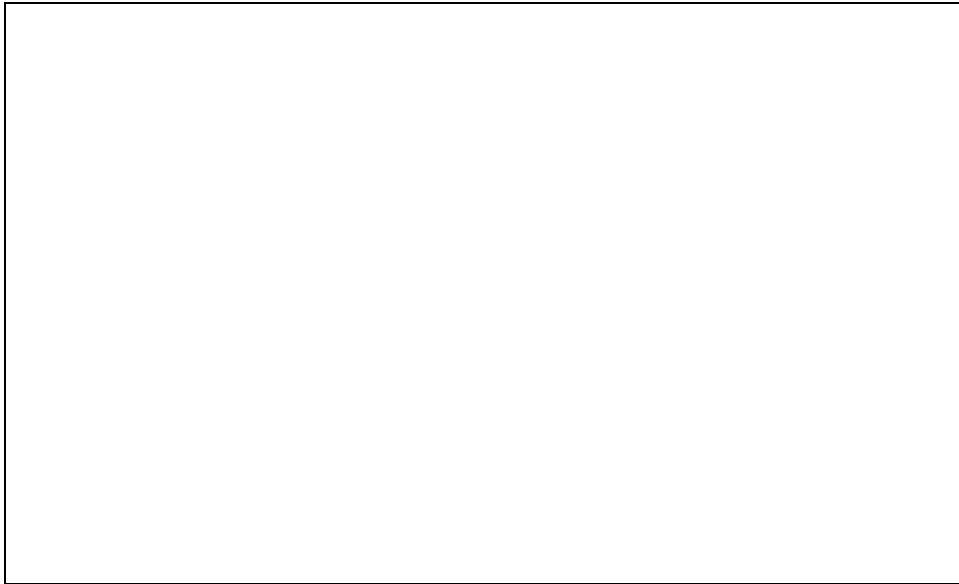
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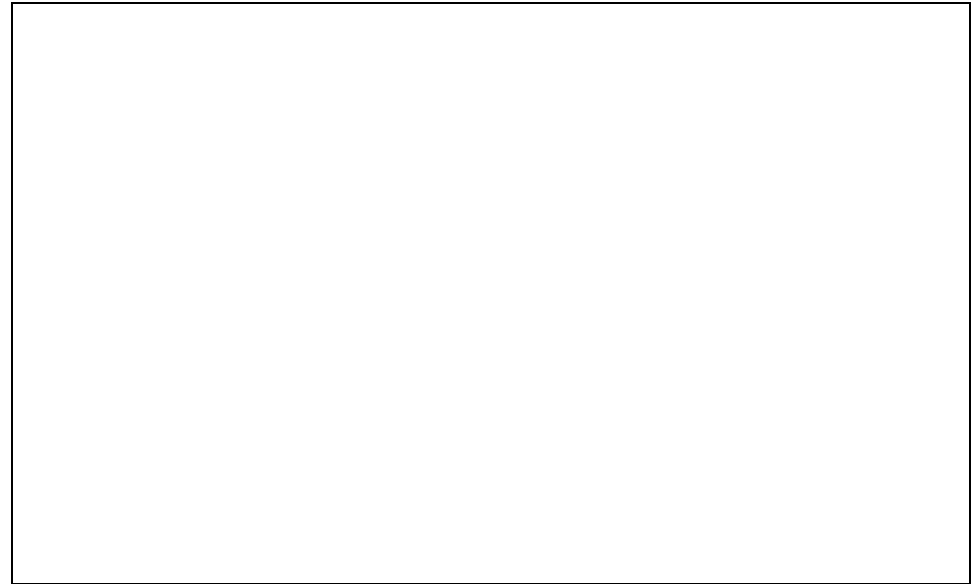
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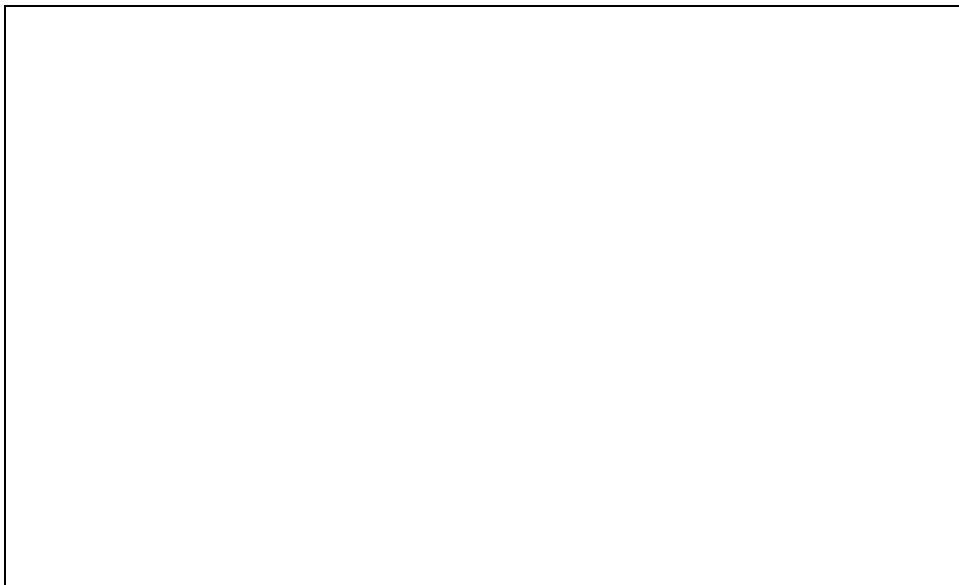
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