<table>
<thead>
<tr>
<th>Writing/Word Study</th>
<th>Social Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students will work on previously taught activities.</td>
<td>Students will work on the science extensions.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Math - Grade Level Practice Problems</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>All students will work on grade level practice problems.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading Log</th>
<th>30 Minutes of Rider Reading Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Please complete the 100 Book Challenge with 3-5 books to support reading and power goals.</td>
<td>All students will bring home their Rider Reading Bags.</td>
</tr>
</tbody>
</table>

**Social Studies**

<table>
<thead>
<tr>
<th>Grades K-2: Students will create a story map using key community, (see example) memorable events of their life. (see example)</th>
</tr>
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</table>

**Science**

<table>
<thead>
<tr>
<th>Grades K-2: Students will read about the science extensions.</th>
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**Math**

<table>
<thead>
<tr>
<th>Grades 3-5: Students will work on grade level practice problems.</th>
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</table>

**Reading**

<table>
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<tr>
<th>Grades 4-5: Students will think of problems, challenges, or issues that affect your school or community. Create a business/community. (see example)</th>
</tr>
</thead>
</table>

**Writing/Word Study**

<table>
<thead>
<tr>
<th>Grades 3-5: Students will work on writing activities.</th>
</tr>
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</table>

**Note:**

*Students can use the Clever platform to access apps including i-Ready, ArchBookshelf, Reading Time, SORA, Epic, etc.*
Writing

Design the book jacket for your ideal fiction book. Make sure to include all the essential literature text features.
Writing

Write the plot summary that would appear on the back of the book jacket you just designed.

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Section A: Practice Problems

1. Pre-unit

What fraction of each figure is shaded?

2. Pre-unit

Explain why the shaded portion represents $\frac{1}{8}$ of the full rectangle.

3. Pre-unit

Label each tick mark with the number it represents. Explain your reasoning.

4. Pre-unit

Explain or show why $\frac{1}{2}$ and $\frac{2}{4}$ are equivalent fractions.
5. a. The entire diagram represents 1 whole. Shade the diagram to represent $\frac{1}{4}$.

b. To represent $\frac{1}{6}$ on the tape diagram, would we shade more or less than what we did for $\frac{1}{4}$? Explain your reasoning.

(From Unit 2, Lesson 1.)

6. a. The entire diagram represents 1 whole. What fraction does the shaded portion represent? Explain your reasoning.

b. Shade this diagram to represent $\frac{2}{10}$.

(From Unit 2, Lesson 2.)
7. For each pair of fractions, decide which is greater. Explain or show your reasoning.

a. $\frac{1}{8}$ or $\frac{1}{10}$

b. $\frac{4}{10}$ or $\frac{7}{10}$

c. $\frac{4}{5}$ or $\frac{5}{4}$

(From Unit 2, Lesson 3.)

8. Use the fraction strips to name three pairs of equivalent fractions. Explain how you know the fractions are equivalent.

(From Unit 2, Lesson 4.)
9. a. Explain or show why the point on the number line describes both $\frac{3}{5}$ and $\frac{6}{10}$.

   0  1

b. Explain why $\frac{6}{10}$ and $\frac{3}{5}$ are equivalent fractions.

   (From Unit 2, Lesson 5.)

10. For each question, explain your reasoning. Use a number line if you find it helpful.

a. Is $\frac{4}{5}$ more or less than $\frac{1}{2}$?

   0  1

b. Is $\frac{4}{5}$ more or less than 1?

   0  1

(From Unit 2, Lesson 6.)
11. Exploration

Make fraction strips for each of these fractions. How did you fold the paper to make sure you have the right-size parts?

a. \(\frac{1}{3}\)

b. \(\frac{1}{5}\)

c. \(\frac{1}{10}\)
12. Exploration

a. Andre looks at these fraction strips and says “Each $\frac{1}{2}$ is $\frac{1}{3}$ and another half of $\frac{1}{3}$.” Do you agree with Andre? Explain your reasoning.

\[
\begin{array}{c}
\frac{1}{2} \\
\frac{1}{3} \\
\end{array}
\]

b. What relationship do you see between $\frac{1}{6}$ and $\frac{1}{4}$? Explain your reasoning.

\[
\begin{array}{c}
\frac{1}{6} \\
\frac{1}{4} \\
\end{array}
\]

c. Can you find a relationship between $\frac{1}{6}$ and $\frac{1}{8}$ using fraction strips?
Section A: Practice Problems

1. Pre-unit

What fraction of the rectangle is shaded? Explain how you know.

2. Pre-unit

a. Locate and label $\frac{3}{4}$ and $\frac{6}{4}$ on the number line.

b. Explain why your points represent $\frac{3}{4}$ and $\frac{6}{4}$. 
3. **Pre-unit**

Write a multiplication expression for each image. Explain your reasoning.

a.

![Image of dots arranged in a rectangular pattern]

b.

![Image of grid]

4. **Pre-unit**

Here are the lengths of some lizards in inches. Use the lengths to complete the line plot.

\[
\begin{array}{cccccc}
2\frac{1}{4} & 1\frac{1}{2} & 2\frac{2}{4} & 3 & 3\frac{2}{4} & 2 \\
2\frac{1}{4} & 2\frac{1}{4} & 2\frac{3}{4} & 2 & 2\frac{1}{4} & 3 \\
\end{array}
\]

Length of Lizards

![Line plot with lizard length (inches) on the x-axis from 0 to 4]
5. Write an expression that matches each diagram. Then, find the value of each expression.

a. ~

b. ~

(From Unit 3, Lesson 1.)

6. Five friends go on a hike. They each bring \( \frac{1}{4} \) cup of nuts.

a. If the shaded parts represent the amount of nuts the friends bring on their hike, which diagram matches the story? Explain your reasoning.

b. How many cups of nuts do the friends bring on the hike?

(From Unit 3, Lesson 2.)
7. Kiran’s cat eats \( \frac{1}{2} \) cup of food each day.

   a. How much food does Kiran’s cat eat in a week?

   b. Draw a diagram to represent the situation.

(From Unit 3, Lesson 3.)

8. a. Draw a diagram to show \( 3 \times \frac{7}{8} \).

   b. How does the diagram help you find the value of the expression \( 3 \times \frac{7}{8} \).

(From Unit 3, Lesson 4.)

9. Find the number that makes each equation true. Draw a diagram if it is helpful.

   a. \( \frac{10}{3} = \underline{\phantom{10}} \times \frac{1}{3} \)

   b. \( \frac{10}{3} = \underline{\phantom{10}} \times \frac{2}{3} \)

   c. \( \frac{10}{3} = \underline{\phantom{10}} \times \frac{5}{3} \)

(From Unit 3, Lesson 5.)
10. Each bead weighs $\frac{5}{8}$ gram. How much do 7 beads weigh? Explain or show your reasoning.

(From Unit 3, Lesson 6.)

11. Exploration

a. Measure how thick your workbook is to the nearest $\frac{1}{8}$ inch.

b. If all of your classmates stacked their workbooks together, how tall would the stack be? Explain or show your reasoning.

c. Check your answer by measuring, if possible.

12. Exploration

Diego walked the same number of miles to school each day. He says that he walked $\frac{48}{5}$ miles in total, but does not say how many days that distance includes.

What are some possible number of days Diego counted and the distance he walked each of those days?
We have a new message from the Rain Forest Conservation Group.
To: Conservation Biologists
From: Rain Forest Conservation Group
Subject: Update on Tokay Geckos’ Environment

Thank you for explaining how Tokay geckos know when they are looking at their prey. We have been doing some research to try to figure out what has changed in the geckos’ environment so that we can know what’s making a difference with the geckos. The only change we could find is that nighttime highway lights were recently installed in this area of the rain forest to make roads safer for drivers. How could more light at night make it hard for the Tokay geckos to see their prey?

Some students read that message and thought it sounded strange. More light at night makes it easier for us to see.
In this chapter, we will work to figure out:

**Chapter 4 Question**

How could more light at night make it hard for a Tokay gecko to see its prey?

We will work to figure out how geckos interact with light. When we know why more light at night makes it harder for geckos to see, we can explain why they’re having trouble surviving.
Is more light making it hard for other animals to see their prey?

Is every animal here having trouble seeing prey?

To help answer these questions, we’ll use observations a scientist made of the Tokay gecko and another lizard from the same area that also uses vision to find its prey. You will need a partner to talk with.

Your partner can be a family member, a friend or classmate on the phone, a nearby animal, or even a pet!
This scientist investigated the vision of a Tokay gecko and an Emerald Tree Skink in her laboratory.

Her observations in her scientist's notebook may help us understand why the highway lights affect the way some animals see but not others.

Let's look at her notebook.

Observe each page of the scientist's notes.

Discuss your observations with your partner.
Skink Observation #1

Time: 11:15 PM

Observation: I placed the prey underneath a clear plastic cup in the terrarium with the Emerald Tree Skink and turned on the light. The skink turned its head toward the prey.

Skink Observation #2

Time: 11:26 PM

Observation: Within a few seconds of turning on the light, the Emerald Tree Skink leapt quickly toward the cup and started pushing the cup with its head, trying to get its prey inside.
Gecko Observation #1

Time: 1:45 PM

Observation: I placed the prey underneath a clear plastic cup in the terrarium with the Tokay gecko and turned on the light. The gecko did not react.

Gecko Observation #2

Time: 1:25 PM

Observation: I have observed the Tokay gecko for 10 minutes and it has not reacted to the prey at all. Can it see the prey?
What was the **main difference** between what the Tokay gecko did and what the Emerald Tree Skink did when the **light** was turned **on**?

---

Let's review how animals process information from light.

Light enters the eye through the **pupil** and gets to the light receptors. The **light receptors** respond and send the information to the **brain**. The brain processes information from light to create an **image** and then compares this image to **memories**.
Both lizards got information from light about the prey.

How did the skink process this information?

How did the gecko process the information it got from light?
Both animals were in an environment with bright light, so the same amount of information about the prey was carried by the light to their eyes. However, it seems like the gecko didn’t even see its prey!

The two lizards must have processed the same information in different ways.

Let’s read to find out more about how animals sense information about their environment in different ways.

This could help us figure out why the nighttime highway lights are causing a problem for the gecko.
Read about the **mantis shrimp** on pages 4-7. Then read about one other animal you choose. Think about any questions you have as you read.
How does a mantis shrimp look in two directions at once?

Move your eyes from side to side. What do you notice? Do your eyes move together and in the same direction? Now, try moving one eye up and one eye down. It’s hard to do, right? For a mantis shrimp, this is no problem!

A mantis shrimp has two eyes, but each eye is made up of hundreds of tiny eyes. A mantis shrimp’s eyes are raised up on stalks above its head. These structures let the mantis shrimp move its left eye and its right eye separately, in different directions. It can look both up and down, or both left and right.

The shrimp’s brain processes the information coming from both eyes. It recognizes the two kinds of prey and decides which will be easier to catch. Then the shrimp strikes! It uses its powerful claws to kill the fish instantly.

Mantis shrimp are colorful animals that live in colorful environments, in and around coral reefs. These animals have lots of different kinds of light receptors in their eyes—many more kinds than humans have. Nobody is sure exactly what the function of so many different light receptors might be. They must help a mantis shrimp survive in its environment. Maybe they help it identify its prey. How? That’s a question scientists are still trying to figure out.

Scientists still have many questions to answer about how mantis shrimp vision works.

Human Vision

Most humans can see hundreds of different colors. To see colors well, we need plenty of light. Humans are diurnal animals, which means, we’re mostly active during the daytime, when there’s plenty of light to use all those colors. Humans can’t see well in low light, the way nocturnal animals can. To see better at night, people have developed special night-vision goggles that are sensitive to low light. We have also developed bright electron lamps that provide us with extra light at night.
What do star-nosed moles use their strange-looking noses for?

Star-nosed moles are named for a unique body structure: a star-shaped nose. Why do their noses have such a strange shape? It doesn’t help the animal’s sense of smell. The star-nosed mole does smell with its nose, but the tentacles that surround the nose have another function, sensing touch.

A star-nosed mole has lots of sensitive tentacles on its nose.

Why is the sense of touch so important to a star-nosed mole? Feeling around is the best way for these moles to get information about their underground environment. Star-nosed moles spend all their time in tunnels they dig in the dirt, hunting for worms, insects, and other small animals. A star-nosed mole can’t find its prey using vision because there is no light in its environment. Even nocturnal animals with high-sensitivity light receptors need some light in order to see. In the complete darkness underground, eyes are useless. The star-nosed mole has to rely on other senses.

A star-nosed mole uses the tentacles on its nose to find prey. The tentacles move around as the mole searches for food. Receptors in the tentacles take in information about everything they touch.

The mole can feel tiny differences between objects in the dark. When a mole touches a small object with its tentacles, the touch receptors send information to the mole’s brain, which processes the information. The mole then decides whether the object is something tasty, like a worm. The touch receptors in its nose tentacles help a star-nosed mole survive in its underground environment.

The Human Sense of Touch

The human body has touch receptors all over. The tongue, lips, and fingertips are the most sensitive parts of the body, with more touch receptors than other parts. Humans have different kinds of touch receptors that provide different kinds of information. For example, there are special touch receptors that respond to texture, heat, cold, pain, and even itching.
How is a catfish like a huge tongue?

Like humans, catfish have taste receptors on their tongues. However, catfish also have taste receptors all over their bodies! That means a catfish tastes anything it touches with its body. Catfish can even taste things at a distance, before touching them. Some people call catfish "swimming tongues"!

This girl can't taste the bottom of the river with her skin, but the catfish swimming next to her can!

Structure Catfish Use to Sense Their Environment

Most catfish live in muddy water where it is hard to see. They swim along the bottom, searching for food. Many kinds of catfish are not picky about what they eat. They will eat plants or animals, living or dead. For a catfish, almost anything it touches might be food. The best way for a catfish to find out whether something is food is by tasting it.

Most catfish are not picky about what they eat. They will eat plants or animals, living or dead. For a catfish, almost anything it touches might be food. The best way for a catfish to find out whether something is food is by tasting it.

With taste receptors in the skin all over its body, a catfish doesn't have to bite something to taste it. As the catfish swims along the bottom of a river, its taste receptors take in flavors and send information to its brain. The brain processes the information and compares the flavors to things the catfish has eaten before. If a catfish tastes food with its skin, it opens its mouth and takes a bite.

The Human Sense of Taste

The human tongue is covered with little bumps that contain hundreds of little buds. Each taste bud has 50 to 100 taste receptors. Most humans can taste five different flavors: sweet, salty, sour, bitter, and umami. Umami means "delicious" in Japanese. It's often described as a "meaty" flavor and it's found in foods like cheese and soy sauce.
**Why do such small foxes have such big ears?**

Fennec foxes are tiny desert animals with fluffy fur. The fennec fox has two very large body structures: its huge ears. These big ears have two important functions. They help the fox stay cool in the hot desert environment and they help it hear.

The ears of fennec foxes are big, but otherwise they work the same way human ears do. Lots of complicated ear structures work together for an important function: getting information from sounds in the environment.

Large ears help the fennec fox take in sound better. Like dogs, foxes can move their ears around and point them toward the source of a sound. When sounds come into the ear, sound receptors respond to the sounds and send information to the brain.

---

**Fennec foxes are nocturnal hunters that use their sense of hearing to catch mice, insects, and other small animals in the dark.** The foxes' large ears help them hear prey moving around underground. To find prey, a fennec fox points its ears toward the ground and moves its head from side to side, listening very carefully. The fox's brain processes sound information and uses it to figure out exactly where its prey is hiding. Then the fox quickly digs into the sand to grab the prey. Sensitive hearing helps a fennec fox find prey and survive in its desert environment.

---

**A fennec fox listens for prey in the desert.**

---

**Fennec foxes use their sense of hearing to hunt mice and other prey that live underground.**

---

**The Human Sense of Hearing**

The human ear contains the smallest bones in the body. These tiny bones vibrate when sound comes in. The sense of hearing usually changes as people get older. Kids can usually hear higher sounds than adults can. Still, some animals can hear sounds much higher or lower than any human can.
How can snakes smell with their tongues?

If you've ever observed a snake up close, you've noticed it flick its tongue in and out of its mouth. It seems to be tasting the air. Actually, the snake is smelling the air! A snake can pick up scents with its tongue.

![Snake with tongue flicking](image)

**Structures Snakes Use to Sense Their Environment**

- **Tongue picks up scent particles in air**
- **Information goes to brain**
- **Scent receptors respond to scents**
- **Tongue carries particles to scent receptors**

Scents are made up of tiny, invisible particles that float through the air. A snake uses its tongue to catch lots of these tiny particles. The snake's tongue carries particles from the air into an area above its mouth. There, scent receptors respond to the particles and send information about the scents to the snake's brain.

Why is a snake's tongue forked (split in two at the end)? A forked tongue helps a snake tell exactly where a smell is coming from. Just like having two eyes helps animals tell the distance and direction of things they see, having a two-ended tongue helps snakes tell the distance and direction of things they smell. This helps snakes hunt. Using only smell, a snake can figure out exactly where its prey is.

An excellent sense of smell helps snakes survive in many different environments.

![Snake with forked tongue](image)

Snakes use their tongues to smell.

The Human Sense of Smell

Humans don't use our tongues to smell. Instead, tiny smell particles are absorbed on the moist receptors in the nasal passages. These receptors send information to the brain, which interprets these scents.

A snake's excellent sense of smell helps it catch tree frogs and other prey.
Think about the **receptors** (light, touch, taste, scent, or sound) you read about.

How do these receptors help the animal you read about **survive**?
The star-nosed mole has thousands of **touch receptors** in its nose. The receptors are structures that help it live underground where there is **no light**.

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🔗 How does being very **sensitive to touch** help the star-nosed mole **survive**?
The star-nosed mole has sensitive touch receptors in its nose.

We now know that different animals sense and process information differently. Some animals have sensitive receptors that can respond to small amounts of information.
End of @Home Lesson
CREATE: A Business Idea

Congratulations, you are interested in starting your own business! The only problem is that you are unsure of what business idea you want to pursue. One approach to creating a successful business is to use the "Problem/Solution Lens" to identify needs in your community.

Part I: Identify Problems, Challenge, Issues
Think about some common issues that arise in your daily life that may also affect other people. Identifying common problems, challenges, and issues is a great place to start when coming up with problem-solving business ideas.

1. Think of as many problems, challenges or issues that affect you, your school, or your community. Create a list of as many of these issues that come to mind. At this phase, aim for quantity over quality and let your imagination run wild!
PART II: Brainstorm Solutions
Now that you have identified common issues that affect you, your school, and your community, let's identify the best ideas and take a closer look at some potential solutions.

1. Let's start by cutting down your list. Consider the following questions and remove items from your list of ideas as necessary:
   - **Is there already a well established solution to this problem that you cannot improve upon?** If there is already a well established solution then this might not be the best business idea.
   - **Is this a problem that you are passionate about solving?** If not, then it might be best to remove it from your list of ideas
   - **Is this a problem that you have the time and money to help solve?** If not, then you might want to remove it from your list.

2. Select the top 2 issues for each category (you, your school, your community) from the remaining list. Put the 6 issues in the middle column of the table below.

3. Complete the right column by brainstorming 3 potential solutions for each problem. **Hint:** Consider the following elements when brainstorming potential solutions:
   - Who are the people that are affected by these problems?
   - Are there currently existing solutions for these problems?
     - i) If not, how do you envision a solution?
     - ii) If so, how can you improve upon existing solutions?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Potential Solutions</th>
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<tbody>
<tr>
<td>1. You</td>
<td></td>
</tr>
<tr>
<td>2. School</td>
<td></td>
</tr>
<tr>
<td>3. Community</td>
<td></td>
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</tbody>
</table>
Part III: Select a Business Idea
Now that you have a list of potential business ideas, it's time to start thinking about which one interests you and what skills you already have that you could use to grow that idea.

1. From the list of potential business ideas you brainstormed above, select what you consider to be the best business idea and explain why.