LOWELL
PUBLIC SCHOOLS

At Home Learning Resources

Grade 6 - Week 6

Content	Time Suggestions
Reading (Read books, watch books read aloud, listen to a book, complete online learning)	At least 30 minutes daily (Could be about science, social studies, etc)
Writing or **Word Work** or **Vocabulary**	20-30 minutes daily
Math	45 minutes daily
Science	25 minutes daily
Social Studies	25 minutes daily
Arts, Physical Education, or **Social Emotional Learning**	30 minutes daily

These are some time recommendations for each subject.
We know everyone's schedule is different, so do what you can.
These times do not need to be in a row/in order, but can be spread throughout the day.
Teachers will suggest which parts of the packet need to be completed or teachers may assign alternative tasks.

Your child can complete any of the activities in weeks 1-5. These can be found on the Lowell Public Schools website: https://www.lowell.k12.ma.us/site/Default.aspx?PageID=3802

This week continues the focus on poetry. Read the brief article by Jacqueline Woodson, former Children's Poet Laureate. Then read the poems and answer the following questions in writing. Finally, write your own blackout poems. Enjoy!

Ways to Talk or Think About a Poem

Think about the big ideas
- What issues are in the poem?
- What does the poet want you to think about the issues?
- What is the theme of the poem?

Look at the line breaks and stanza breaks
- How do the stanzas relate to each other?
- How do you connect one part with the next part?

Relate the title to the poem
- How is it significant?

Examine a metaphor or other literary device
- What things are being compared in the similes or metaphors? Why?
- How do they effect the meaning of the poem?

Lift Every Voice
Poetry takes many forms—including the form YOU give it.
BY JACQUELINE WOODSON

I used to be afraid of poetry. I thought it was some secret code only certain people were supposed to understand… But I know now that poetry belongs to all of us.

I struggled to read as a child. Sometimes, words circled around my brain in confusing ways. So I had to read the same lines over and over until the poem or story or essay became a part of me. And made sense.

This is how one becomes a writer—by reading slowly and re-reading. By studying the way a poet breaks a line or finds a clever rhyme or makes you smile. *What words were just used? Hey! How did they do that?* Go back and read it again.

Once I was afraid of poetry. I didn't think it belonged to me. But as I said, poetry belongs to all of us. As Young People's Poet Laureate, my hope is to share the joy of poetry, to get you to write, speak, think about poetry everyday. Poetry takes many forms—including the form YOU give it. James Weldon Johnson (1871-1938) wrote the lyrics/poem for what became The Black National Anthem—"Lift Every Voice and Sing." This is what I'm hoping to do—to lift every young voice in this country.

Lift Every Voice and Sing
BY <u>JAMES WELDON JOHNSON</u>

Lift every voice and sing
Till earth and heaven ring,
Ring with the harmonies of Liberty;
Let our rejoicing rise
High as the listening skies,
Let it resound loud as the rolling sea.
Sing a song full of the faith that the dark past has taught us,
Sing a song full of the hope that the present has brought us.
Facing the rising sun of our new day begun,
Let us march on till victory is won.

Stony the road we trod,
Bitter the chastening rod,
Felt in the days when hope unborn had died;
Yet with a steady beat,
Have not our weary feet
Come to the place for which our fathers sighed?
We have come over a way that with tears has been watered,
We have come, treading our path through the blood of the slaughtered,
Out from the gloomy past,
Till now we stand at last
Where the white gleam of our bright star is cast.

God of our weary years,
God of our silent tears,
Thou who hast brought us thus far on the way;
Thou who hast by Thy might
Led us into the light,
Keep us forever in the path, we pray.
Lest our feet stray from the places, our God, where we met Thee,
Lest, our hearts drunk with the wine of the world, we forget Thee;
Shadowed beneath Thy hand,
May we forever stand.
True to our God,
True to our native land.

A group of young men in Jacksonville, Florida, arranged to celebrate Lincoln's birthday in 1900. My brother, J. Rosamond Johnson, and I decided to write a song to be sung at the exercises. I wrote the words and he wrote the music. Our New York publisher, Edward B. Marks, made mimeographed copies for us, and the song was taught to and sung by a chorus of five hundred colored school children.
Shortly afterwards my brother and I moved away from Jacksonville to New York, and the song passed out of our minds. But the school children of Jacksonville kept singing it; they went off to other schools and sang it; they became teachers and taught it to other children. Within twenty years it was being sung over the South and in some other parts of the country. Today the song, popularly known as the Negro National Hymn, is quite generally used.
The lines of this song repay me in an elation, almost of exquisite anguish, whenever I hear them sung by Negro children.

on paper
BY <u>JACQUELINE WOODSON</u>

The first time I write my full name

Jacqueline Amanda Woodson

without anybody's help
on a clean white page in my composition notebook,
    I know

if I wanted to

I could write anything.

Letters becoming words, words gathering meaning,
    becoming
thoughts outside my head

becoming sentences

written by

                    Jacqueline Amanda Woodson

Occasional Poem
BY <u>JACQUELINE WOODSON</u>

Ms. Marcus says that an occasional poem is a poem
written about something
important
or special
that's gonna happen
or already did.
Think of a specific occasion, she says—*and write about it.*

Like what?! Lamont asks.
He's all slouched down in his seat.
I don't feel like writing about no occasion.

How about your birthday? Ms. Marcus says.
What about it? Just a birthday. Comes in June and it ain't
June, Lamont says. *As a matter of fact,*
he says, *it's January and it's snowing.*
Then his voice gets real low and he says
And when it's January and all cold like this
feels like June's a long, long ways away.

The whole class looks at Ms. Marcus.
Some of the kids are nodding.
Outside the sky looks like it's made out of metal
and the cold, cold air is rattling the windowpanes
and coming underneath them too.

I seen Lamont's coat.
It's gray and the sleeves are too short.
It's down but it looks like a lot of the feathers fell out
a long time ago.
Ms. Marcus got a nice coat.
It's down too but real puffy so
maybe when she's inside it
she can't even tell January from June.

Then write about January, Ms. Marcus says, *that's*
an occasion.
But she looks a little bit sad when she says it
Like she's sorry she ever brought the whole
occasional poem thing up.

I was gonna write about Mama's funeral
but Lamont and Ms. Marcus going back and forth
zapped all the ideas from my head.

I guess them arguing
on a Tuesday in January's an occasion
So I guess this is an occasional poem.

Blackout Poetry

Blackout poems can be created using the pages of old books or even articles cut from a newspaper or magazine, or printed from an article online. Using the pages of an existing text, blackout poets isolate then piece together single words or short phrases from these texts to create masterpieces. A poem lives within the words and lines of any page…lift your voice and uncover your message.

Skim your page of words. Don't read carefully, as the point is just to grab an idea from the words, not take them in. Find a word, phrase or general theme that you like. Now go through and lightly circle the words or phrases you might like to use.

On a piece of paper, write down your words and phrases in order, and read them through, Cross out the words you don't want. If you need a few connecting words (like "a", "the", "it", etc. then dive back in and see if you can find them between the words you want to connect. You often can! Circle them and add them to your poem.

Go back through your poem and boldly box the words you are keeping with pen, Sharpie, dark pencil, etc. Erase any circles around words you don't want.

Read through your final poem. Sketch in a few images or symbols on your page that relate to the theme of your poem. Now it's time to start blackening. Black out everything that is NOT a word in your poem or one of your own sketches. When you are done, copy your poem onto a blank piece of paper to display with your blackout poem.

BLACKOUT POETRY

Have fun!

Lesson 2 👥 Introduction
Understand Unit Rate

💭 Think It Through

How are ratios, rates, and unit rates related?

Ratios, rates, and **unit rates** are all comparisons. They compare one quantity to another quantity.

A **ratio** compares any two quantities.

Yolanda uses 4 cups of nuts and 2 cups of dried fruit to make trail mix.

You can use a tape diagram to show this comparison.

Nuts

Dried Fruit

The ratio is 4 cups to 2 cups or 4:2. Notice that the quantity of nuts is double the quantity of dried fruit.

Think Every ratio has a related rate.

Nuts

Dried Fruit

A related **rate** is an equivalent ratio that compares the first quantity in a ratio to only one of the second quantity. In this example, you know that the amount of nuts is double the amount of dried fruit. So, what if you want the same kind of mix but you only have 1 cup of dried fruit? How many cups of nuts would you use?

Think: 4:2 is the same as _____:1.

The rate is 2 cups of nuts to 1 cup of dried fruit. You can also say the rate is 2 cups of nuts per cup of fruit.

The **unit rate** is the number in a rate that is being compared to 1. In the previous problem, the unit rate of nuts to fruit is 2. Let's look at another example.

Marco earned $85 for 10 hours of work.

Ratio of dollars to hours: 85 to 10

Rate of dollars to 1 hour: Marco earned $85 in 10 hours, so he earned $85 ÷ 10 in 1 hour. He earned $8.50 for each 1 hour, or $8.50 per 1 hour.

Unit Rate: The part of the rate that is compared to 1 is $8.50.

Marco earned $8.50 for each hour that he worked.

Talking about rates in different ways helps me understand them. I can say "$8.50 for every hour," "$8.50 for each hour," or "$8.50 per hour."

▶ **Reflect**

1 What is the difference between a ratio and its related rate and unit rate?
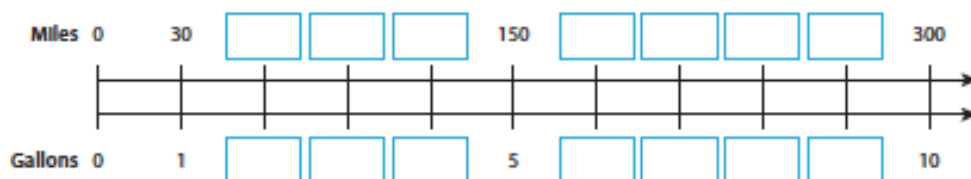
_____

_____

_____

_____

_____

Think About **Finding Unit Rates**

🔍 **Let's Explore the Idea** A double number line can be used to find rate and unit rate.

A car can travel 300 miles on 10 gallons of gas. The ratio is 300 miles to 10 gallons.

Miles 0   30   ☐ ☐ ☐   150   ☐ ☐ ☐ ☐   300

Gallons 0   1   ☐ ☐ ☐   5   ☐ ☐ ☐ ☐   10

2 What do the 300 and 10 in the double number line represent?

_____

3 Fill in the remaining numbers on both number lines.

4 Look at the corresponding pairs of numbers on the bottom and top number lines. Write a multiplication sentence to show how 10 gallons and 300 miles are related. How are 5 gallons and 150 miles related? How are 1 gallon and 30 miles related?

_____

5 Use words to describe the relationship between the number of miles and each corresponding number of gallons.

_____

_____

6 What is the rate of miles per gallon for this car?

_____

7 What is the unit rate of miles to gallons? _____

8 Look at the model on the previous page. What pattern do you see in the numbers of miles?

_____

What pattern do you see in the numbers of gallons?

_____

9 Now look at all of the corresponding numbers of miles and gallons. Describe the pattern.

_____

_____

10 Write the ratio given in the problem. _____

Use division to find the related rate. Explain how you know your answer is correct.

_____

11 Look at your answer to Problem 10. How can you find the related rate for a ratio?

_____

Try It Another Way Work with your group to use equivalent fractions to find the rate and unit rate.

12 A 10-pound box of apples costs $12.50. Write the ratio of cost to number of pounds as a fraction. Then find an equivalent fraction with a denominator of 1. Write the rate and unit rate to describe the cost of the apples.

_____

_____

13 A driver traveled 260 miles on the highway for 4 hours, driving at the same speed for the whole trip. Write the ratio of miles to hours. Then use what you know about equivalent fractions to write a related rate and unit rate.

_____

_____

Connect ▶ **Finding Unit Rates**

Talk through these problems as a class. Then write your answers below.

14 Identify Write the letter of the rate that matches each ratio.

☐ $7.50 : 3 pounds

☐ $3.75 to 5 pounds

☐ $6.00 : 4 pounds

☐ $13.50 to 6 pounds

a. $0.75 for every 1 pound

b. $2.25 for each 1 pound

c. $2.50 for every 1 pound

d. $1.50 per 1 pound

15 Analyze Use the information on this nutrition label to write the unit rates described below. Show your work.

There are _____ calories in 1 cracker.

One cracker has a mass of _____ grams.

There are _____ fat calories in 1 cracker.

Nutrition Facts
Serving Size: 2 Crackers (14 grams)
Servings Per Container: About 20

Amount Per Serving

Calories 50   Calories From Fat 15

_____

_____

_____

16 Compare Dawn earned $97.50 for 10 hours of work. Amy earned $120 for 12 hours of work. How much did each person earn per hour? How can you use this information to compare their earnings?

_____

_____

_____

_____

Apply ▶ **Finding Unit Rates**

17 Put It Together A recipe uses 3 cups of flour and 2 cups of sugar.

Part A Write the ratio of flour to sugar. Then write the related rate and unit rate. Be sure to label your answers.

Part B Now write the ratio of sugar to flour. Then write the related rate and unit rate. Be sure to label your answers.

Part C Imagine that the recipe is doubled and that 4 cups of sugar are used. Use the unit rate in A to find how much flour is needed. Show your work.

_____

_____

Part D Imagine that 6 cups of flour are used to make the recipe. Use the unit rate in B to find how much sugar is needed.

_____

_____

Part E Compare your answers to C and D and explain how the two unit rates are related.

_____

_____

_____

_____

CRYPTIC QUIZ

1. What should the JOLLY GREEN GIANT receive?

$\overline{}_{6}$ $\overline{}_{5}$ $\overline{}_{18}$ $\overline{}_{11}$ $\overline{}_{16}$ $\overline{}_{15}$ $\overline{}_{52}$ $\overline{}_{18}$ $\overline{}_{70}$ $\overline{}_{2}$ $\overline{}_{80}$ $\overline{}_{18}$ $\overline{}_{9}$ $\overline{}_{12}$ $\overline{}_{13}$ $\overline{}_{80}$ $\overline{}_{20}$ $\overline{}_{30}$ $\overline{}_{1}$ $\overline{}_{18}$

2. Why did it take the GOAT more than 3 hours to finish a 20-page book?

$\overline{}_{5}$ $\overline{}_{18}$ $\overline{}_{21}$ $\overline{}_{8}$ $\overline{}_{9}$ $\overline{}_{12}$ $\overline{}_{16}$ $\overline{}_{6}$ $\overline{}_{24}$ $\overline{}_{4}$ $\overline{}_{18}$ $\overline{}_{20}$ $\overline{}_{3}$ $\overline{}_{60}$ $\overline{}_{5}$ $\overline{}_{10}$ $\overline{}_{16}$ $\overline{}_{7}$ $\overline{}_{20}$ $\overline{}_{3}$

Solve each proportion and find your answer in the code. Each time the answer appears, write the letter of the exercise above it.

(I) $\dfrac{2}{5} = \dfrac{12}{n}$

(S) $\dfrac{3}{4} = \dfrac{9}{n}$

(G) $\dfrac{6}{2} = \dfrac{21}{n}$

(O) $\dfrac{10}{4} = \dfrac{n}{6}$

(Y) $\dfrac{5}{15} = \dfrac{n}{9}$

(T) $\dfrac{12}{8} = \dfrac{n}{4}$

(U) $\dfrac{2}{n} = \dfrac{5}{25}$

(A) $\dfrac{33}{n} = \dfrac{11}{3}$

(L) $\dfrac{49}{n} = \dfrac{7}{10}$

(V) $\dfrac{n}{6} = \dfrac{6}{9}$

(Z) $\dfrac{n}{4} = \dfrac{18}{72}$

(H) $\dfrac{n}{2} = \dfrac{50}{20}$

(W) $\dfrac{14}{n} = \dfrac{7}{4}$

(E) $\dfrac{8}{12} = \dfrac{12}{n}$

(B) $\dfrac{n}{13} = \dfrac{4}{1}$

(R) $\dfrac{24}{6} = \dfrac{n}{5}$

(N) $\dfrac{n}{10} = \dfrac{40}{25}$

(P) $\dfrac{24}{n} = \dfrac{30}{100}$

What Happened When There Was a Kidnapping at Bizarre Middle School?

Write each ratio in simplest form, then find your answer at the bottom of the page. Write the letter of the exercise in the box above the answer.

I. Write .eachratio.

(E) Stars to squares

(O) Circles to stars

(H) squares to circles

(T) Stars to all figures

(M) Stars to circles

(E) Squares to all figures

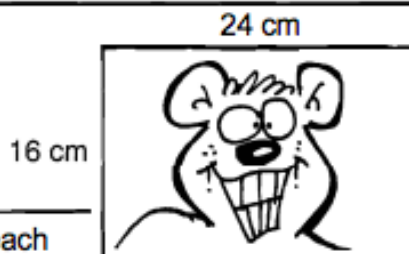**II. A TV screen is 15 in. high and 20 in. wide. Write each ratio.**

(H) Height to width

(A) Width to height

III. A magazine photograph is 24 cm long and 16 cm wide. Write each ratio.

24 cm

16 cm

(E) Length to width

(P) Width to length

IV. There are 30 students in a class, including 16 boys. Write each ratio.

(H) Girls to boys

(R) Boys to girls

(E) Girls to all students

(I) Boys to all students

V. A fire-breathing swamp monster is 36 feet tall. When last observed, his shadow was 40 feet long. Write each ratio.

(T) Height of monster to length of shadow

(W) Length of shadow to height of monster

VI. Count the number of teeth on each gear. Then write each ratio.

(C) Teeth on Gear X to teeth on Gear Y

(U) Teeth on Gear Y to teeth on Gear Z

(K) Teeth on Gear X to teeth on Gear Z

X   Y   Z
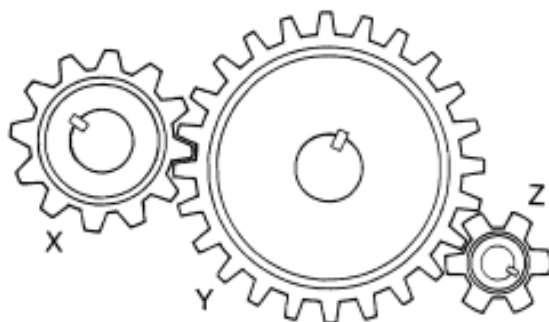
$\frac{5}{18}$	$\frac{6}{7}$	$\frac{7}{15}$	$\frac{2}{5}$	$\frac{9}{10}$	$\frac{5}{6}$	$\frac{4}{3}$	$\frac{1}{2}$	$\frac{7}{8}$	$\frac{1}{3}$	$\frac{8}{7}$	$\frac{5}{4}$	$\frac{10}{9}$	$\frac{7}{5}$	$\frac{2}{1}$	$\frac{3}{2}$	$\frac{7}{11}$	$\frac{3}{4}$	$\frac{8}{15}$	$\frac{5}{7}$	$\frac{8}{3}$	$\frac{4}{1}$	$\frac{2}{3}$

Monday

① Express the ratio in three different ways (grey to white).

● ● ○ ○ ○

$\frac{\square}{\square}$ $\square$ to $\square$ $\square$: $\square$

②

Integer	Opposite	Absolute Value
3		
–4		
8		

③ Write an expression to represent:

"A number n divided by 6"

④ Solve. Show your work.

27.9 + 212.5 =	175.5 – 12.7 =

⑤ 975 ÷ 6 =   478 × 38 =
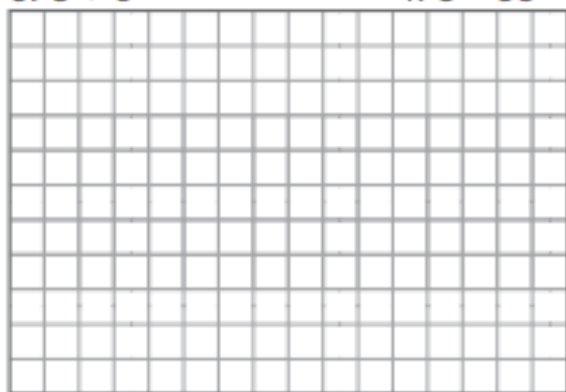
Tuesday

① 4 shirts for $32.00

rate = _____   unit rate = _____

② Fraction: _____

Decimal: _____

Ratio: _____   Percent: _____
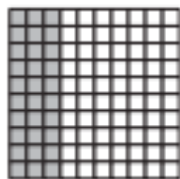
③ What is 50% of 80?

part → $\square$ $= \dfrac{\square}{100}$ ← percent
whole → $\square$

④ Ken grew $\frac{4}{5}$ of an inch last year. Sang grew $\frac{3}{8}$ of an inch. Who grew more and by how much?

⑤ Complete the table and then graph the coordinates.

$y = x + 2$

x	y
0	2
1	
2	
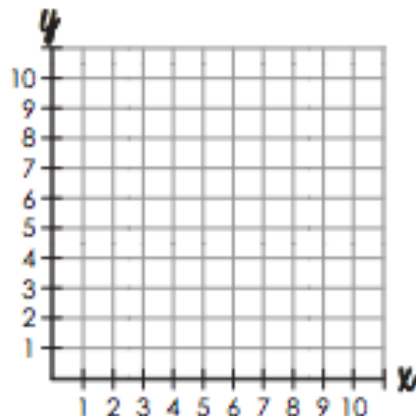
① Simplify. Show your work.

$$3^2 \times 5 + 4 = \underline{\quad}$$

③ Based on the diagram, describe how a parallelogram and rectangle are related.
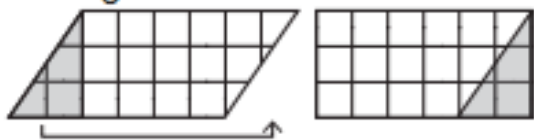
② Model and solve.

$$4 \div \frac{2}{3} =$$

④ Solve

$$\frac{5}{8} \times \frac{1}{2} =$$

$$\frac{1}{4} \times \frac{4}{5} =$$

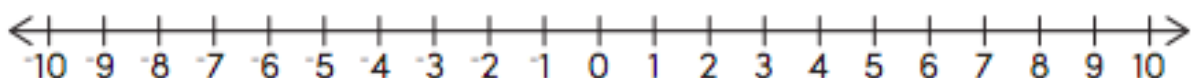⑤ Write > or < to make each statement true. Use the number line for help.

2 ◯ 7   -5 ◯ 4   3 ◯ 0   0 ◯ -3   -1 ◯ 1

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

① Use substitution to match these solutions to their equations.

{7, 2, 6, 4}

$$a + 2 = 9, \quad a = \underline{\quad}$$

$$2 + b = 6, \quad b = \underline{\quad}$$

$$c + 1 = 7, \quad c = \underline{\quad}$$

② Use the commutative property write an equivalent expression.

$$5 + 9 =$$

_____

③ Identify if the question is statistical or non statistical.

"What color are your eyes?"

④ Graph and label the polygon: (3, 1), (9, 1), (9, 7), (3, 7)

⑤ Graph and label the polygon: (-4, 2), (-8, 2), (-8, 8), (-4, 8)
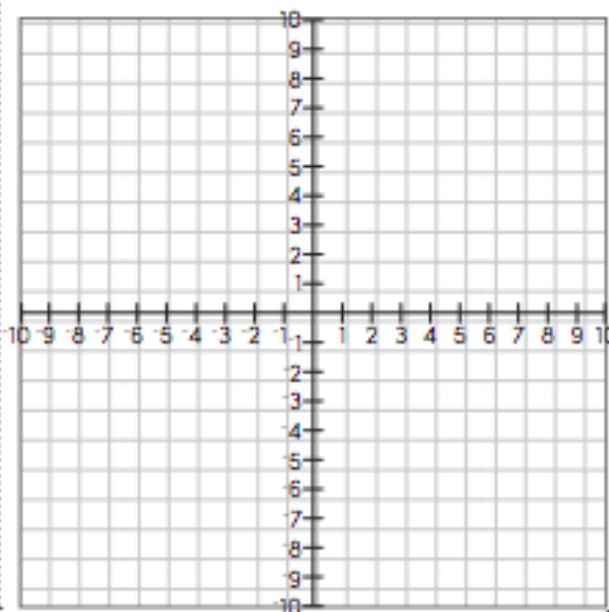
RATIO SOLVE AND COLOR

Find the equivalent ratio. Then find the answer and color it the corresponding color.

1 4 : 5	**2** 19 : 7	**3** 14 : 8	**4** 82 : 36
5 9 : 12	**6** 17 : 8	**7** 6 : 12	**8** 18 : 38
9 26 : 7	**10** 10 : 3	**11** 2 : 11	**12** 4 : 14
13 24 : 6	**14** 8 : 32	**15** 50 : 44	**16** 64 : 36

RED	YELLOW	PINK	BLUE	LIGHT GREEN	ORANGE	DARK GREEN	PURPLE
4 : 1	9 : 19	88 : 110	30 : 9	2 : 7	41 : 18	16 : 9	3 : 4
25 : 22	57 : 21	22 : 121	1 : 2	51 : 24	28 : 16	1 : 4	78 : 21

PAPER TABLE

DESIGN SQUAD™
PBS®
as built on TV™
pbs.org /designsquad
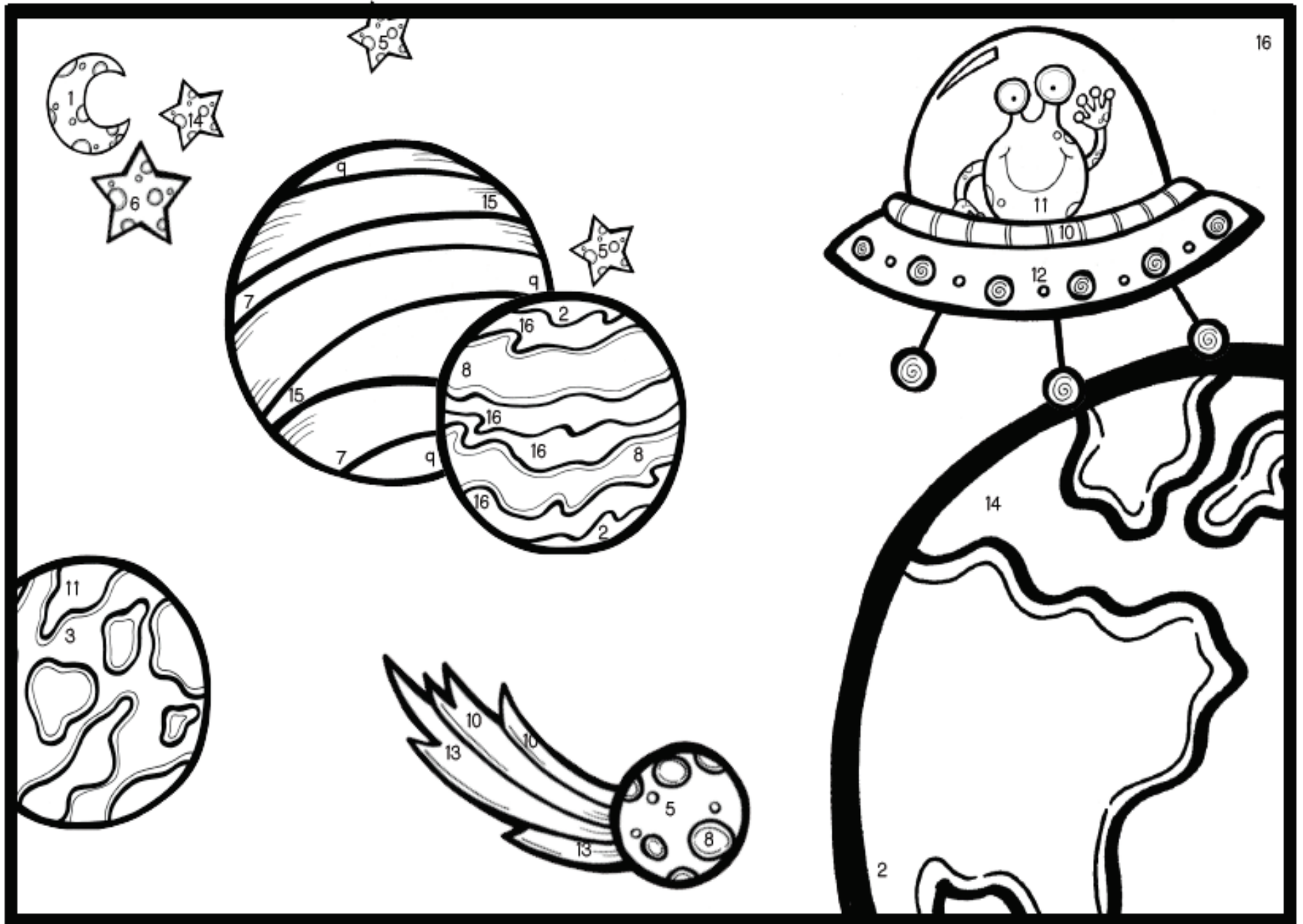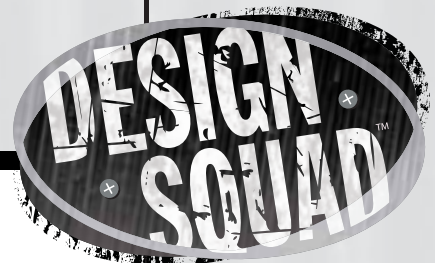
YOUR CHALLENGE

Design and build a table out of newspaper tubes. Make it at least eight inches tall and strong enough to hold a heavy book.

BRAINSTORM & DESIGN

Look at your materials and think about the questions below. Then sketch your ideas on a piece of paper or in your design notebook.

1. How can you make a strong tube out of a piece of newspaper? (This challenge uses tubes because it takes more force to crumple paper when it's shaped as a tube.)

2. How can you arrange the tubes to make a strong, stable table?

3. How can you support the table legs to keep them from tilting or twisting?

4. How level and big does the table's top need to be to support a heavy book?

**MATERIALS** (per person)
• 1 piece of cardboard or chipboard (approximately 8 ½ x 11 inches)
• heavy book (e.g., a textbook or telephone book)
• masking tape
• 8 sheets of newspaper

BUILD, TEST, EVALUATE & REDESIGN

Use the materials to build your table. Then test it by carefully setting a heavy book on it. When you test, your design may not work as planned. If things don't work out, it's an opportunity—not a mistake! When engineers solve a problem, they try different ideas, learn from mistakes, and try again. Study the problems and then redesign. For example, if:

• the tubes start to unroll—*Re-roll them so they are tighter. A tube shape lets the load (i.e., the book) push on every part of the paper, not just one section of it. Whether they're building tables, buildings, or bridges,* **load distribution** *is a feature engineers think carefully about.*

• the legs tilt or twist—*Find a way to stabilize and support them. Also check if the table is lopsided, too high, or has legs that are damaged or not well braced.*

• a tube buckles when you add weight—*Support or reinforce the weak area, use a wider or thicker-walled tube, or replace the tube if it's badly damaged. Changing the shape of a material affects its strength. Shapes that spread a load well are strong. Dents, creases, and wrinkles that put stress on some areas more than others make a material weaker.*

• the table collapses—*Make its base as sturdy as possible. Also, a table with a lot of triangular supports tends to be quite strong. A* **truss** *is a large, strong support beam. It is built from short boards or metal rods that are arranged as a series of triangles. Engineers often use trusses in bridges, buildings, and towers.*
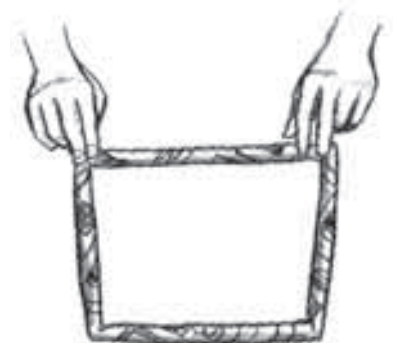
TAKE IT TO THE NEXT LEVEL

- If a little is good, a lot is better! Build a table that can hold two or more heavy books.

- The sky's the limit. Build a table that can hold a heavy book 16 inches above the ground.

- Matching furniture! Build a chair out of newspaper.

ENGINEERING IN ACTION

A paper house? Better leave your matches outside! Check out these items that engineers made out of paper. Then choose from the list and see if you can figure out the year each item was invented.

Years these items were invented: 1922; 1931; 1967; 1995; 2004; 2007

_____ **A. Paper Church**
After a big earthquake in Japan, engineers quickly made a building by stretching a paper "skin" across 58 paper tubes, each over 16 feet long. The church was only meant to be a temporary place of worship. But it's still standing today.

_____ **B. Paper Video Disc**
This disc holds more than three times as much data as a standard DVD and is much better for the environment. But you'll have to stay tuned— there's no release date set.

_____ **C. Paper House**
An engineer built a vacation home out of newspaper. He glued newspapers into one-inch-thick slabs and then used them to make the walls. It's still standing!

_____ **D. Paper Towels**
By mistake, a factory made rolls of paper that were too thick for toilet paper but too weak for most other uses. But where others see problems, engineers see possibilities. The paper was sold as "Sani-Towels," which soon became known as paper towels.

_____ **E. Paper Batteries**
They're smaller than a postage stamp but can power a light bulb! And they decompose in landfills. Engineers are still figuring out how to get them to work with all our gadgets.

_____ **F. Paper Dresses**
Engineers created paper outfits that could be printed with designs. They were sold in boutiques and in stationery stores, where you could get a tablecloth to match!

(Answers: A: 1995; B: 2004; C: 1922; D: 1931; E: 2007; F: 1967)

Watch the DESIGN SQUAD Cardboard Furniture episode on PBS or online at pbs.org/designsquad.

GENERATIONGENIUS
STREAM. EDUCATE. ENTERTAIN.

WAVELENGTH

▶ **Link to Video**

https://www.generationgenius.com/?share=02D4F

DIY ACTIVITY

MAKE YOUR OWN WAVE MODEL
GRADES 3-5

OBJECTIVES

- Build a model that demonstrates wave motion.
- Experiment with energy and wave motion.

MATERIALS NEEDED

- BBQ skewers—approximately 30
- Gummy candy—more than 60
- Duct tape—more than 10 feet
- Glass of water
- Ruler
- Structures to anchor the duct tape (like a table and a bookshelf)

Activity Duration: 30 minutes or more

PROCEDURE

▶ **AS A GROUP, WATCH THE GENERATION GENIUS WAVE PROPERTIES VIDEO TO FURTHER EXPAND THIS UNDERSTANDING AND INTRODUCE LONGITUDINAL WAVES.**

1. Carefully place one gummy candy on each end of each skewer. Dip each end of the skewer into the water before adding the gummy candy to make the candy easier to puncture. **The skewers are very sharp - use caution.**
2. When skewers are prepared, stretch a length of duct tape approximately 5 feet long (sticky side up) across a clean, flat surface. Use a little extra duct tape to anchor the ends of the duct tape so it stays flat and taut while you work on the next steps.
3. Find the balance point near the center of the skewer by balancing it on one of your fingers. Hold the skewer at that point and place it perpendicularly across the duct tape, making sure to place the balance point in the center of the duct tape strip. Press the skewer to the duct tape
4. Use a ruler to place each additionanl skewer 2 inches apart along the duct tape strip.
5. When all skewers have been placed, carefully put another piece of duct tape sticky side to sticky side along the length of the wave model.
6. Anchor one end of the model to one surface and the other to another so that the wave model is suspended between.
7. Experiment with waves by tapping one skewer.

WHAT IS GOING ON HERE?

Because all the skewers are linked together and mobile, when energy is added to the system by tapping one skewer, it is transferred along the length of the model through a wave. The skewers and the gummy candies make it easy to see the wave. If enough energy is added to the system, when it reaches the anchor point, it is reflected and travels back along the wave model in the other direction. By watching the gummy candy you can see the amplitude and wavelength. Adding more energy to the system (tapping harder) will cause wavelength to decrease and amplitude to increase.

Explore how waves change as more or less energy is added to the system (harder or softer tap). How can amplitude be increased? Decreased? How can wavelength be increased? Decreased? Try making several wave models and connectin them (or make a longer wave model) and experiment by adding energy to the system.
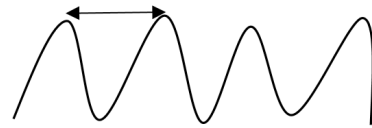
Name: _____   Date: _____

GENIUSCHALLENGE

WAVE PROPERTIES

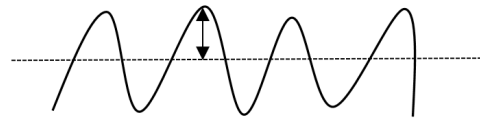**1.** What is transferred from place to place by waves? _____

2. True or false: when placed in water, a ball moves from one place to another with the waves.

_____

3. What is this called? _____

4. What is this called? _____

5. True or false: longitudinal waves move up and down. _____

6. Which of these is true of sound waves?

        a. they only work in air

        b. move in all directions

        c. can be heard in space

7. What is it called when dolphins communicate underwater through sound waves?

_____

8. Fill in the blank using the word(s) **increases**, **decreases**, or **stays the same**.

When energy increases, amplitude _____.

9. Fill in the blank using the word **transverse** or **longitudinal**.

Water waves are _____ waves because the wave moves up and down.

10. What moves the pieces of salt on top of the speaker when the music is playing?

_____

Grade Six – Social Studies

Southwest Asia and North Africa
Migration and Trade

From National Geographic World Cultures and Geography, Chapter 16, Section 1.1, p. 440

Migration, or the movement from one place to another, is a familiar process in Southwest Asia and North Africa. Three kinds of migration mark this region: movement for herding, movement or trade, and movement for job opportunities.

Nomadic Herders

The **Bedouin** (BEHD u ihn) are a nomadic, Arabic-speaking people who live in the deserts of Saudi Arabia, Iraq, Syria, Israel, and Jordan. Most Bedouin trace their ancestry to the Arabian Peninsula. Strongly independent, Bedouin often identify themselves first as Bedouin rather than as citizens of a country. The Bedouin move from place to place as they herd camels, sheep, goats, or cattle. Their migration patterns depend on the season and the needs of their herds.

Salt Traders

As you have learned, the Sahara is a vast, hot desert and a difficult physical barrier to cross. However, for those who overcame the difficulties, trade across the Sahara could be very profitable. Once group of traders, the **Tuareg** (TWAH rehg) historically dominated the trans-Saharan caravan trade – especially the salt trade. The Tuareg are a semi-nomadic people who live in various North African countries, including Algeria and Libya. Each winter, Tuareg traders travel in small caravans across a wide expanse of barren sand dunes in the Sahara. Caravans stop at oases along the way for rest and water. At these oases, the Tuareg trade goats for salt and millet, a grain, for dates, which are dried fruits of the date palm. After returning home, the Tuareg sell the salt and dates at market for a profit.

Guest Workers

Today's migration is prompted by a variety of different factors. Resource-rich countries such as Saudi Arabia draw millions of guest workers, or temporary laborers who migrate to work in another country. Companies employ guest workers to fill labor needs and shortages. Guest workers, seeking better wages than they might make in their home countries, work in industries such as Dubai in the United Arab Emirates, guest workers represent a large percentage of the total population.
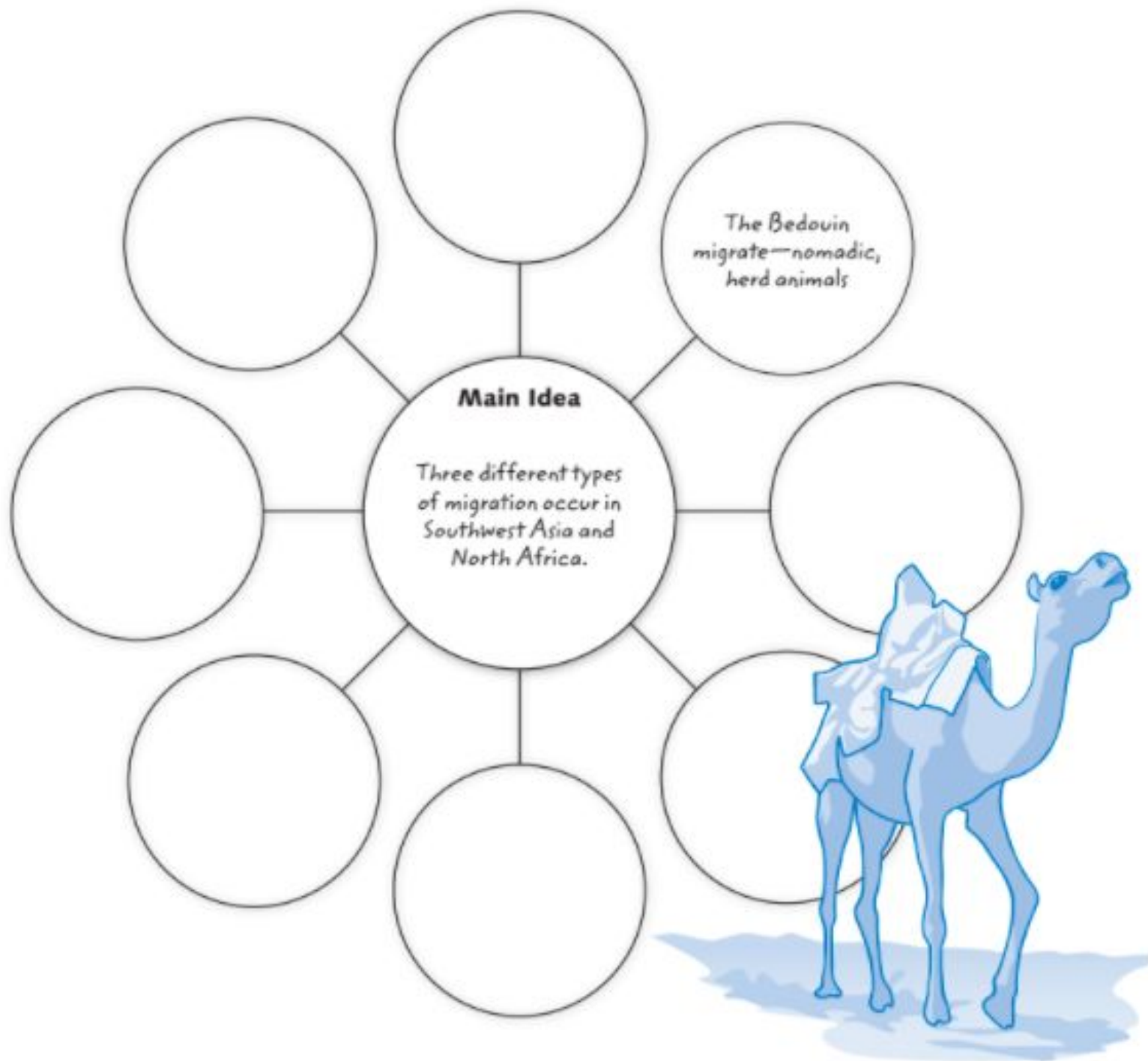
SECTION **1** CULTURE
1.1 Migration and Trade

Reading and Note-Taking **Find Main Idea and Details**

Use the Detail Web below to record the Main Idea and supporting details as you read Section 1.1 in your textbook.

The Bedouin migrate—nomadic, herd animals

Main Idea

Three different types of migration occur in Southwest Asia and North Africa.

ESL at Home Gr. 6-8 Weeks 5-6
Use notebook paper to complete these activities. Do one each day!

Monday	Tuesday	Wednesday	Thursday	Friday
Who is your favorite book or movie character? Write or draw what would happen if you met them in real life.	Look at the food in your home. Create a pretend menu for lunch. **Example**: Pretzel and jelly sandwich with a side of tuna fish: $4.67 Chocolate chip scrambled eggs with salsa ice cream: $5.99	Unscramble these animal names, then draw the animal. caro rwmo cnaotu rumle	Make a t-chart of healthy and unhealthy foods in your home.	Create your own superhero. Draw and label a costume and superpowers. Write about a time the superhero saved someone.
Monday	Tuesday	Wednesday	Thursday	Friday
Use boxes or books to create a ramp. Find five things to roll down the ramp. What rolls the farthest? What rolls the shortest?	Design a plan for your dream neighborhood. Draw and label a map of the homes, streets, and businesses you would have.	Create a commercial for your new neighborhood. Tell what makes it special and why people should move there.	Listen to any song. Write down any similes you hear. Ex: "I came in LIKE a wrecking ball."	Choose two animals, like a horse and an alligator. Imagine what they would look like if they were put together. Draw it, and write about its ecosystem.