At Home Learning Resources

Grade 4 - Week 11

https://2020census.gov/
Grade 4 ELA Week 11

All previous activities, as well as other resources can be found on the Lowell Public Schools website: https://www.lowell.k12.ma.us/Page/3800

This week continues a focus on fiction reading and realistic fiction narrative writing. Your child should be reading, writing, talking and writing about reading, and working on exploring new vocabulary each week.

**Reading:** Students need to read each day. They can read the text included in this packet and/or read any of the fiction books that they have at home, or can access online at Epic Books, Tumblebooks, Raz Kids, or other online books. All resources are on the LPS website. There is something for everyone.

**Talking and Writing about Reading:** As students are reading, they can think about their reading, then talk about their reading with a family member and/or write about their reading using the prompts/questions included.

**Writing:** Students will continue working on realistic fiction narratives for the next weeks. The resources in this packet will be the same for next week for writing as well. These resources are charts with examples to help your child write. They are available online in an interactive form with video tutorials here: [Grade 4 Narrative Writing Choice Board](https://www.lowell.k12.ma.us/Page/3800). Click on the images/starbursts to watch the video tutorials. This writing should last throughout the weeks. Students will be planning their writing, then writing, then making it even better by revising, writing some more, and at the end, fixing it up by editing. Your child might write 1 realistic fiction story and work to refine it throughout, or might write multiple realistic fiction stories, getting better each time.

**Word Work:** Students can work on learning new vocabulary words using clues in the text. Students can choose any words they find in their reading.
When reading fiction texts, think about the following. Stop and jot, and respond in writing as you are reading or when you are done.

**Drawing on All You Know to Read Well & Interpret Texts**

**Read intensely.**
- Find the flow of the book
- Make movies in your mind

**Read, thinking about many aspects of a book.**
- Setting
- Recurring objects
- Mood
- Plot

**Ask early in the story: “What is this story about?”**

**Be alert to places in the text that seem extra important.**

**Connect ideas you’ve had about the book.**

**Determine themes and support them with evidence from across the story.**
It was the middle of July. I had spent two days exploring a bat cave in the Jornada del Muerto desert in southern New Mexico.

The cave was part of an ancient flow of lava, now hardened into solid rock. The lava had gurgled out of the ground like liquid metal 250 thousand years ago. The cave was tucked away in what had once been an air bubble in the flow. The top side of the bubble had fallen in, creating an opening in the roof of a long, narrow cave that led back into the lava two hundred feet, a perfect home for bats.

I had left the cave and was driving my pickup truck on a rough track across the hard, jagged surface of the lava flow. Suddenly the steering wheel jerked and my hands slipped. The truck ground to a halt, caught on a black lava boulder.

A quick inspection of the underside proved the worst: the truck's axle was bent, nearly broken in two.

I could not expect rescue in such remote country. I put my remaining food and canteens of water into my day pack and set off on foot, going north, the direction of the main highway.

I was low on water. Too little food did not matter, but hiking across the desert in July without water could be fatal.

As I set out, I hatched unreasonable fears in my mind. I was afraid of everything around me. Grasshoppers hopped, beetles crawled, rodents scurried. Each creature made my heart jump. In my mind, every movement was a scary animal about to strike and kill me.

I walked for hours in this state of mind. I cried and groaned until I realized that nobody was around to hear me. Complaining was useless.
A change came over me, a gradual transformation. I began to feel less afraid. Fear was replaced by curiosity.

I went on, and slowly but surely began to see the desert world differently, through interested eyes, not frightened ones.

A rattlesnake slithered past, scales glistening in the sun. The wild beauty of the snake steadied me. I might have run but didn't, realizing the animal meant me no harm. It never even saw me.

The snake slid over the ground and vanished. In the silence and hazy heat of that moment, I noticed how peaceful the arid land was. Desert dwellers large and small went on with their lives, paying no attention to me.

That night I lay on the warm sand, using my day pack as a pillow. The sky went dark.

The stars began to shine, zillions of tiny fires spinning reassuringly in the hugeness of the heavens.

With a burned-lip smile I thought how little there was to fear, after all.

By noon the following day I was out of water. I continued north, forging a delicate balance in my mind between fear of death and the certainty I would live. I began to think how lucky I was to see the wild desert world. A wrecked truck and a forced hike across the desert gave me a chance to see what few others ever saw.

Late in the day, miles from the road, I came to a ranch house. It stood at the edge of the lava flow, low against the desert scrub, half-invisible through the waves of heat rising from the ground.

I walked into the yard and was greeted by a skinny hound dog. The rancher was close behind. He tipped the brim of his cowboy hat. “Care for some lemonade?” he said.

I drank all the lemonade that he and his wife had in their refrigerator. When it ran out, I drank tap water until my belly was swollen and sore.

“I liked it out there,” I told them when we got to talking. “I just wish I had been less frightened. I would have noticed more that way. Being scared made me miss things I would have seen otherwise.”

“I know what you mean,” the man said thoughtfully, scratching his chin whiskers with the fingers of one hand. “It’s a rare sight, that desert wilderness, a rare sight.”

The next morning the three of us rode out on horseback to check on my truck.

“It’s a goner,” the rancher said.

“Totaled,” I agreed.
“Too bad,” his wife said. “Such a pretty color, too.”

We spent the night by the cave, watching the bats fly out. Hawks and owls were diving and trying to catch a late-in-the-day meal. The three of us sat thinking, saying little.

I knew that I might have perished on the bone-dry desert. Unlike the bats, hawks, and owls, I was not equipped for life with little water. All I could think about was how I wanted to take the same walk a second time.

When the day ended, the rancher said, “Too bad more folks can’t see this. Might make them think twice about what’s beautiful in the wild.”

“Yes sir,” his wife said, “that’s the truth of it.”
After reading the text, determine the theme of the text using specific details from the text.
Grade 4 Realistic Fiction Writing Choice Board - Visit the online option for an interactive board with tutorials. Use the anchor charts to help you write your own realistic fiction story.

Getting Ideas for Fiction

- Develop a strong story idea
- Character(s)
- Setting

Plan Your Fiction Story

- How to Write a Realistic Fiction Story
- Draft scene by scene, only using summary when needed.

Developing Characters

- Study ways other authors make stories better - try some!
- Create trouble in the story, resolving that trouble at the end.

Edit!

Getting Ideas for Fiction

- Observe the world or reread entries. Mine your notebook for story ideas.
- Ask, “What books do I wish existed in the world?”
- Think about an issue that is important to you and create a character who struggles with that issue.

Example:

Elexa

Elexa is an 11 year old girl that wants to be the next basketball leader. But her brother, who wants to be a doctor, still sees her as a child in the eyes of her friendship. She has noticed that the boy who was following her around, [name], is now following next, what will happen next?

Things are really hard right now for a boy named Marquis. He really loves his big brother, but lately it seems like Erick doesn’t hang out with him very much. And, Mom seems really worried-stressed all the time. One night, Marquis heard Erick and Mom talking about money and they seemed upset. Erick was saying he could work more at the grocery store, and he told Mom not to worry. But Mom wants Erick to work on his school work, too. Marquis is worried about both of them. What will happen to the family?
Plan Your Fiction Story

I sat in reading class and gulped to take in each word read aloud. Even when the teacher was reading out loud, it felt like all I could hear was the high-pitched, each syllable like a sharp knife cutting into me. I thought to myself, “My ear should be with an ear.” I then thought, “I hope I’m strong enough to tell him.”

On my way to class, I was so busy picking up and handing in my project that I didn’t realize I had bumped into Mr. He. I then thought, “I don’t need any more.”

He came closer! Lexie whispered.
“OHH,” then I shouted, “RUN!”
We tried to run as fast as we could, but we knew that wasn’t fast. We rushed for the door, trying to slip into class without being noticed by a teacher or just a hall monitor.

I had bumped into Mr. He and was so busy picking up my project that I didn’t realize I had bumped into Mr. He. I then thought, “I don’t need any more.”

Develop Characters by Thinking about Their:

- collections
- favorite clothes
- special places on earth
- treasures
- worries
- quirks
- secrets
- relatives
- ways of walking, talking, and gesturing
- rituals for waking up, going to sleep
- meals and mealtimes
- best friends
- phone calls

Elena

<table>
<thead>
<tr>
<th>inside</th>
<th>outside</th>
</tr>
</thead>
<tbody>
<tr>
<td>wants to be</td>
<td>brown hair, curly</td>
</tr>
<tr>
<td>leader</td>
<td>good at math</td>
</tr>
<tr>
<td>cares about her</td>
<td>talks a lot</td>
</tr>
<tr>
<td>friends</td>
<td>has a dog</td>
</tr>
<tr>
<td>worries a lot</td>
<td>weddings sunglasses</td>
</tr>
<tr>
<td>but doesn’t tell</td>
<td>Favorite color is</td>
</tr>
<tr>
<td>anyone</td>
<td>green</td>
</tr>
</tbody>
</table>
Develop a strong
>story idea
>character(s)
>setting

I tiny thump thump down the stairs into the kitchen. "Mom, we are having tomato soup tonight," I grumble. "I know" I reply.

Advice for Developing a Character

- Start with whatever you've decided matters to you about your character.
- Put together a character so that all the parts fit together into a coherent person.
- Reread often, asking, "Do these different things make sense within one person? Do they fit together in a believable way? Are these traits here for a reason?"

- Inside
- Outside
- Brown hair, curly
- Brown eyes
- Talks a lot
- Has a dog
- Can't see glasses
- Favorite color is green

Draft possible story arcs. Revise until it feels just right.

Draft #1

Draft #2

Draft #3
A Storyteller’s Voice Shows, Not Tells.

It...

- describes actions that took place.
- describes what we saw, smelled, tasted, or felt.
- describes images around the storyteller.
Create trouble in the story, resolving that trouble at the end.

Tammy Reviews her Ending

Ending 1
Then I looked closely.
Something was missing.
"Ranger, where is your coat?"
"Ranger" gave me a sly smile and a quick wink.
I have no idea.

Ending 2
I looked down the hall, and
saw a brown speck darting towards me. "Is that Ranger? Why
can't I see his animal coat?" I wondered.
I looked again. "Yes, it's
Ranger!" He stopped at my
feet, gave me a sly smile and a quick wink. "Ranger, where is your
coat?" "What coat?"

Editing Checklist

☐ Read for sense and missing words.

☐ Edit for punctuation.

☐ Check for correct capital letters at the beginning of new sentences, when using proper nouns, or when giving someone’s title.

☐ Check that known, high-frequency words are spelled correctly.

☐ Read each aloud to check for fragments and run-on sentences.

☐ Check every word to be sure it is spelled correctly.

Key Questions Fiction Writers Consider in Revising Endings

• Can the reader see evidence of the main character’s evolution?

• Does my ending make sense or come out of nowhere?

• Are the loose ends tied up? Have I answered the reader’s key questions?

• Problems, Obstacles, Questions

• Have I revealed everything I need to for the story’s purposes?
Vocabulary

Write one word in each *Word* box. Then use the clues from the text and what you already know about the word to determine the definition of each word. If you find more words, do the same thing on a separate piece of paper.

<table>
<thead>
<tr>
<th>Word</th>
<th>Story Clues</th>
<th>What I Know</th>
<th>My Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Multiply Multiples of 10, 100, and 1,000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>7 × 5 =</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>3 × 2 =</td>
<td>23.</td>
</tr>
<tr>
<td>2.</td>
<td>30 × 2 =</td>
<td>24.</td>
</tr>
<tr>
<td>3.</td>
<td>300 × 2 =</td>
<td>25.</td>
</tr>
<tr>
<td>4.</td>
<td>3,000 × 2 =</td>
<td>26.</td>
</tr>
<tr>
<td>5.</td>
<td>2 × 3,000 =</td>
<td>27.</td>
</tr>
<tr>
<td>6.</td>
<td>2 × 4 =</td>
<td>28.</td>
</tr>
<tr>
<td>7.</td>
<td>2 × 40 =</td>
<td>29.</td>
</tr>
<tr>
<td>8.</td>
<td>2 × 400 =</td>
<td>30.</td>
</tr>
<tr>
<td>9.</td>
<td>2 × 4,000 =</td>
<td>31.</td>
</tr>
<tr>
<td>10.</td>
<td>3 × 3 =</td>
<td>32.</td>
</tr>
<tr>
<td>11.</td>
<td>30 × 3 =</td>
<td>33.</td>
</tr>
<tr>
<td>12.</td>
<td>300 × 3 =</td>
<td>34.</td>
</tr>
<tr>
<td>13.</td>
<td>3,000 × 3 =</td>
<td>35.</td>
</tr>
<tr>
<td>14.</td>
<td>4,000 × 3 =</td>
<td>36.</td>
</tr>
<tr>
<td>15.</td>
<td>400 × 3 =</td>
<td>37.</td>
</tr>
<tr>
<td>16.</td>
<td>40 × 3 =</td>
<td>38.</td>
</tr>
<tr>
<td>17.</td>
<td>5 × 3 =</td>
<td>39.</td>
</tr>
<tr>
<td>18.</td>
<td>500 × 3 =</td>
<td>40.</td>
</tr>
<tr>
<td>19.</td>
<td>7 × 2 =</td>
<td>41.</td>
</tr>
<tr>
<td>20.</td>
<td>70 × 2 =</td>
<td>42.</td>
</tr>
<tr>
<td>21.</td>
<td>4 × 4 =</td>
<td>43.</td>
</tr>
<tr>
<td>22.</td>
<td>4,000 × 4 =</td>
<td>44.</td>
</tr>
</tbody>
</table>
Lesson 7: Use place value disks to represent two-digit by one-digit multiplication.

### Multiply Multiples of 10, 100, and 1,000

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>4 x 2 =</td>
<td>23.</td>
</tr>
<tr>
<td>2.</td>
<td>40 x 2 =</td>
<td>24.</td>
</tr>
<tr>
<td>3.</td>
<td>400 x 2 =</td>
<td>25.</td>
</tr>
<tr>
<td>4.</td>
<td>4,000 x 2 =</td>
<td>26.</td>
</tr>
<tr>
<td>5.</td>
<td>2 x 4,000 =</td>
<td>27.</td>
</tr>
<tr>
<td>6.</td>
<td>3 x 3 =</td>
<td>28.</td>
</tr>
<tr>
<td>7.</td>
<td>3 x 30 =</td>
<td>29.</td>
</tr>
<tr>
<td>8.</td>
<td>3 x 300 =</td>
<td>30.</td>
</tr>
<tr>
<td>9.</td>
<td>3 x 3,000 =</td>
<td>31.</td>
</tr>
<tr>
<td>10.</td>
<td>2 x 3 =</td>
<td>32.</td>
</tr>
<tr>
<td>11.</td>
<td>20 x 3 =</td>
<td>33.</td>
</tr>
<tr>
<td>12.</td>
<td>200 x 3 =</td>
<td>34.</td>
</tr>
<tr>
<td>13.</td>
<td>2,000 x 3 =</td>
<td>35.</td>
</tr>
<tr>
<td>14.</td>
<td>3,000 x 4 =</td>
<td>36.</td>
</tr>
<tr>
<td>15.</td>
<td>300 x 4 =</td>
<td>37.</td>
</tr>
<tr>
<td>16.</td>
<td>30 x 4 =</td>
<td>38.</td>
</tr>
<tr>
<td>17.</td>
<td>3 x 5 =</td>
<td>39.</td>
</tr>
<tr>
<td>18.</td>
<td>30 x 5 =</td>
<td>40.</td>
</tr>
<tr>
<td>19.</td>
<td>6 x 2 =</td>
<td>41.</td>
</tr>
<tr>
<td>20.</td>
<td>60 x 2 =</td>
<td>42.</td>
</tr>
<tr>
<td>21.</td>
<td>4 x 4 =</td>
<td>43.</td>
</tr>
<tr>
<td>22.</td>
<td>400 x 4 =</td>
<td>44.</td>
</tr>
</tbody>
</table>

Number Correct: _______

Improvement: _______
Multiplying multi-digit numbers by 1-digit

Find the product of each multiplication expression. Some strategies are shown in the example below. Do you have another strategy that works? Try a strategy that makes sense to you and check your answer by using a different strategy.

1,423 x 3

<table>
<thead>
<tr>
<th>Area Model</th>
<th>Partial Product</th>
<th>Standard Algorithm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000 + 400 + 20 + 3</td>
<td>1423 x 3</td>
<td>1423 x 3</td>
</tr>
<tr>
<td>3 3000</td>
<td>1200</td>
<td>60 9</td>
</tr>
<tr>
<td>3000 1200 60 9</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>9 = 3 x 3</td>
<td>90 = 3 x 30</td>
<td>4269</td>
</tr>
<tr>
<td>1200 = 3 x 400</td>
<td>1200 = 3 x 400</td>
<td></td>
</tr>
<tr>
<td>+ 3000 = 3 x 1000</td>
<td>+ 3000 = 3 x 1000</td>
<td></td>
</tr>
<tr>
<td>4269</td>
<td>4269</td>
<td></td>
</tr>
</tbody>
</table>

1. 38 x 4  
2. 65 x 7

3. 426 x 3  
4. 732 x 9

5. 3,264 x 5  
6. 2,542 x 8
Multiplying 2-digit by 2-digit numbers

Find the product of each multiplication expression. Some strategies are shown in the example below. Do you have another strategy that works? Try a strategy that makes sense to you and check your answer by using a different strategy.

<table>
<thead>
<tr>
<th>63 x 45</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area Model</strong></td>
</tr>
<tr>
<td><img src="image" alt="Area Model Diagram" /></td>
</tr>
<tr>
<td>60</td>
</tr>
<tr>
<td>2400</td>
</tr>
<tr>
<td>300</td>
</tr>
<tr>
<td>2835</td>
</tr>
</tbody>
</table>

1. 81 x 43
2. 56 x 72
3. 26 x 53
4. 72 x 39
Jennifer has 256 followers on Instagram. Stella has 3 times as many followers as Jennifer. Tiah has 104 more followers than Stella.

Part A: How many followers does Tiah have?

Part B: List the girls in order from most followers to least followers. How do you know?
Skeptical Skittles

How many skittles in the jar?

What is your estimate?

What is an estimate that is too high? Why?

What is an estimate that is too low? Why?
How many skittles in the jar?

There are 58 packages of skittles in the jar.

Solve:

Was your answer close to your estimate? Why/why not?
Greatest Product

Directions: Using the digits 1 to 9 at most one time each, fill in the boxes to make the greatest product.

First attempt

What did you learn from this attempt? How will your strategy change on your next attempt?
Second attempt

What did you learn from this attempt? How will your strategy change on your next attempt?

Third attempt

What did you learn from this attempt? How will your strategy change on your next attempt?

Fourth attempt

What did you learn from this attempt? How will your strategy change on your next attempt?
Greatest Quotient

Directions: Using the digits 1 to 9 at most one time each, fill in the boxes to make the greatest quotient.

First attempt

What did you learn from this attempt? How will your strategy change on your next attempt?
Second attempt

What did you learn from this attempt? How will your strategy change on your next attempt?

Third attempt

What did you learn from this attempt? How will your strategy change on your next attempt?

Fourth attempt

What did you learn from this attempt? How will your strategy change on your next attempt?
1. Using Activity Item: Demographics Across the U.S., work with a partner to fill in the percentage of people in each category in the table below.

<table>
<thead>
<tr>
<th>State</th>
<th>American Indian and Alaska Native</th>
<th>Speak a language other than English at home</th>
<th>Bachelor’s degree or higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>My State</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South Dakota</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Texas</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New Jersey</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Which of the states in your table has the highest percentage of ...

   American Indians and Alaska Natives? ______________________

   People who speak a language other than English at home? ______________________

   People who have a bachelor’s degree or higher? ______________________
3. Write three sentences explaining how diversity in your state compares to the diversity in another state listed in the table.

4. Use the grids below to compare population information for two states.
   a. Circle the category your class picks from the choices below.

   American Indian and Alaska Native
   Speak a language other than English at home
   Have a Bachelor’s degree or higher

   b. Write in the names of the two states your class chooses to compare:

   I am comparing states ________________________ and ________________________

   c. Now color in the squares in the grids to show the percentage of people in the selected category for each state. Each square represents 1%, so if you are showing 20%, you should color in 20 squares.
Home Extension

Take your student worksheet home and share it with an adult in your home. Ask them in what ways they think your community is diverse. Then explain why it is important that you and all the people in your home are counted in the 2020 Census!
Activity Item: Demographics Across the U.S.

<table>
<thead>
<tr>
<th></th>
<th>South Dakota</th>
<th>Texas</th>
<th>New Jersey</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Population</strong></td>
<td>869,666</td>
<td>28,304,596</td>
<td>9,005,644</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>84.7%</td>
<td>73.9%</td>
<td>67.9%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>2.0%</td>
<td>12.1%</td>
<td>13.5%</td>
</tr>
<tr>
<td>American Indian and Alaska Native</td>
<td>8.7%</td>
<td>0.5%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Asian</td>
<td>1.2%</td>
<td>4.8%</td>
<td>9.8%</td>
</tr>
<tr>
<td>Native Hawaiian and Other Pacific Islander</td>
<td>0.1%</td>
<td>0.1%</td>
<td>0.0%</td>
</tr>
<tr>
<td>Two or More Races</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.5%</td>
</tr>
<tr>
<td><strong>Hispanic or Latino</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic or Latino (of any race)</td>
<td>3.6%</td>
<td>39.4%</td>
<td>20.4%</td>
</tr>
<tr>
<td>Not Hispanic or Latino</td>
<td>82.3%</td>
<td>41.9%</td>
<td>54.8%</td>
</tr>
<tr>
<td><strong>Households and Families</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total households</td>
<td>344,260</td>
<td>9,623,874</td>
<td>3,218,798</td>
</tr>
<tr>
<td>Average Household Size</td>
<td>2.43</td>
<td>2.88</td>
<td>2.74</td>
</tr>
<tr>
<td>Living in the same house 1 year ago, percent of persons age 1+ years</td>
<td>85.1%</td>
<td>85.1%</td>
<td>89.5%</td>
</tr>
<tr>
<td>Language other than English spoken at home, percent of persons age 5+ years</td>
<td>6.4%</td>
<td>35.6%</td>
<td>31.8%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High school graduate or higher, percent of persons age 25 years+, 2013-2017</td>
<td>91.4%</td>
<td>89.2%</td>
<td>82.8%</td>
</tr>
<tr>
<td>Bachelor’s degree or higher, percent of persons age 25 years+, 2013-2017</td>
<td>27.8%</td>
<td>38.1%</td>
<td>28.7%</td>
</tr>
</tbody>
</table>

DIY ACTIVITY

MAKE A PAPER GLIDER INSPIRED BY BIRD STRUCTURES
GRADES 3–5

OBJECTIVES
• Use the engineering design process to make a structure and redesign it based on test results.
• Use biomimicry to experiment with structures that accomplish similar functions for birds.

PROCEDURE
1. Cut the sharp point off of one skewer.
2. Choose a wing shape to mimic, based upon the shape of a bird’s wing. To make a wing modeled after an albatross, like Zoe does in the video, follow the folding instructions below.
3. Fold the construction paper in half lengthwise. Then fold two of the corners toward the center fold. Use the coin to press along the folds and create a strong crease. Finally, fold the wings back over the folded corners to create the glider shape.
4. Have an adult help you poke a hole at the edge of the fold under the wing (see video). Then insert the wooden skewer through the hole to create support for the wings. Tape the skewer to the wing.
5. Send your glider on a test flight.
6. Try modifying the structure of your glider to more closely mimic a bird. Replace the skewer with straws which are lighter and hollow, like bird bones. Also, you might try changing the shape of the wings to make them even narrower.

MATERIALS NEEDED
• Wooden skewers
• Scissors
• Tape
• Straws
• A coin
• Sturdy construction paper

To see the video, click on the link below.
https://www.generationgenius.com/?share=DEB96
7. Try another test flight.
8. Try adding a tail. Birds use their tails to help them control their flight. Cut a triangular piece of construction paper, insert it into the back of the fold and tape in place.
9. Test the glider again.
10. Try other modifications based on different bird structures.

WHAT IS GOING ON HERE?

Using the structures of living things to help inspire engineering designs is called biomimicry. Birds and other living things have structures that serve a specific function. When humans need to solve similar problems they can turn to animals and plants for answers.

FURTHER EXPLORATION

The point of this DIY Activity is to experiment with different bird structures and see what works and what doesn’t. Research the structure of different bird’s bodies and wings, and try designing and testing gliders in different shapes. Keep notes about what worked and what didn’t. You are using biomimicry to design and redesign—just like an engineer!

⚠️ Skewers and scissors are sharp. Have an adult poke a hole through the construction paper with the scissors.
Why do Immigrants Come to Lowell?

Read the articles, “Immigration in Lowell”, and “Lowell’s Immigration Time Line”. Write the names of the following immigrant groups in the correct order in the timeline below:

Columbians    Portuguese    Irish    Southeast Asians
Greeks    Polish    Puerto Ricans    French Canadians

People from Southeast Asia, India, Central and South America, Africa

1820s – 1850s:

1860s – 1880s:

1890s – 1910s:

1910s:

1950s:

1960s:

1970s – 1980s:

Today:
Pick one of the groups from the previous page. If you know someone who immigrated to Lowell, you can choose the country they came from. Describe the “push” and “pull” factors causing many people in that group to want to come to America. “Push” factors are reasons someone is being pushed away from their home country. “Pull” factors are reasons someone believes life in America will be better. You can use information from both articles to learn more about the group you chose.

The group I chose: ________________________________

<table>
<thead>
<tr>
<th>Push Factors</th>
<th>Pull Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Immigration in Lowell

In the 1820s and 1830s, Irish people moved to Lowell to help build mills and dig canals. They typically did not work in the mills and lived in a neighborhood called the Acre. The situation changed in the 1840s. Mill owners needed workers, and the Irish were ready to work. More were arriving daily, fleeing the potato famine in Ireland. By 1860, about 1/4 of the 37,000 people in Lowell were Irish. Lowell continued to grow during the 1800s, as more and more workers were needed.

Beginning in the 1860s, thousands of French-Canadians moved south from Quebec. Later, thousands of immigrants moved to Lowell from Greece, Portugal, Poland, and other European countries. All of these immigrants were looking for a better life in the United States. They came to Lowell because they had heard that there were jobs in the mills. There were jobs, but it was not pleasant work. The day was long: 10-12 hours per day, six days a week. The conditions were dangerous: injuries and serious illness were very common. The pay was low and whole families often had to work in the mills to make ends meet. Immigrants kept coming, though, because life was even worse in their home country. Outside the mills, immigrants formed strong ethnic communities. Churches, coffee houses, marketplaces, and social clubs helped ease the change to a new culture. Life was hard, but many immigrants told fond stories of Lowell’s close communities they lived in.

Immigration is still part of the story of Lowell. Today, people emigrate from places like Brazil and Cambodia, and refugees arrive from Nepal, Bhutan, Burma, Iraq, Ghana and many other countries. Their experiences of hope and hardship are very similar to those of earlier immigrants.

Images: Lowell National Historical Park
See also: Lowell Immigration Time Line
Lowell’s Immigration Time Line

1822  Led by Hugh Cummisky, 30 Irishmen walk from Charlestown to Lowell to build canals and mills. They camp near their work in an area called the "Paddy Camp Lands." This area is known later as the Acre.

1823  Mill agents begin recruiting young women and men from New England farms to work in the mills. They live in boardinghouses run by the corporations for which they work.

1831  St. Patrick’s Church opens in the Acre. It is the first ethnic and first Catholic Church in Lowell.

1840s  Waves of Irish immigrants come to Lowell fleeing starvation from the Potato Famine in their homeland. Irish immigration continues throughout the nineteenth century.

1844  The Ten Hour Movement begins. Workers petition the state legislature to pass a law limiting the workday to ten hours.

1850s  "Know Nothing" movement flourishes in northern states. This nativist backlash against immigration is caused by Protestant fears about increased numbers of Catholic voters.

1865  Mill agents send recruiters to Quebec to find new workers. Starvation and lack of work cause French Canadians to leave their homeland and immigrate to Lowell in large numbers. Many go back and forth between the US and Canada.


1890s  The first Greek immigrants to work in the mills arrive. Most are young, single men living in tenement houses in the Acre. Many hope to save money and return to Greece, but few do.

1892  Ellis Island opens. Annual immigration to the US averages about 1,000,000 over the next two decades.

1890s  Polish immigrants begin to arrive in Lowell. Fleeing starvation and mistreatment, many hope to return to their homeland. They settle in tenement houses near the mills, and are forced to take low-paying jobs because they do not speak English.
1905  Greek women, brought over by their fathers and brothers, begin to settle in Lowell. Many single women take jobs in the mills. Once married, most work in the home, raising children. The Greek community grows stronger.

1910s  Portuguese immigrants begin arriving in large numbers. Most are from the Azores Islands, and settle in the Chapel Hill neighborhood of Lowell.

1914-1918  World War I disrupts ocean travel and dramatically decreases immigration.

1921  Congress passes law restricting immigration. Annual quota is about 150,000.

1924  Congress passes National Origins Act, drastically reducing immigration from Eastern and Southern Europe (14% of 150,000, or about 20,000 annually).

1950s  People from Puerto Rico begin their migration to Lowell.

1960s  People from Columbia begin immigrating to Lowell. Many are skilled textile workers recruited by the few remaining mills.

1970s-1980s  Southeast Asians, including Cambodians, Laotians, and Vietnamese begin to settle in Lowell. Most are refugees forced to leave their homelands because of the Vietnam war.

Today  Newcomers arrive weekly, adding to Lowell’s diverse immigrant community. Many immigrants still come from Cambodia, Vietnam, Laos, and Thailand. Others arrive from India, Central and South America, and Africa. Lowell continues to be home to many immigrants and refugees. The immigrant/refugee/migrant experience continues to shape Lowell and the nation.
# ESL at Home 3-5 Weeks 11-12
Use notebook paper to complete these activities. Do one each day!

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| Choose a TV Show or Movie and write a review for it! Include a summary and why you like it/don’t like it. First, ___. Next, ___. Last, ___. I like this/don’t like this because ___. Another reason is because ___. | Find **10 food random items** of your choice in your house. Line them up in alphabetical order, A-Z. **Example:** Crackers, Apple, Banana | Go on a walk outside. What are some **natural resources** that you see? What are some **physical features** of your area? Sketch and label. **Natural resources:** water, plants, sunlight. **Physical Features:** Mountain, hills, river. | Design your dream house. Draw and label rooms, furniture, and the fun features you would put at your house! | Write your own math problem and solve it. Then, write to explain how you solved it. **Example**: \( 468+782 = \) First, ___. Next, ___. Last, ____.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| Read two books. Compare/contrast the characters, setting, problem, solution, etc. using a venn diagram. | Use things around your house to create an invention to launch items into the air using **force**. How do you get items to go farther? Less distance? Higher? Sketch and label your invention. | Practice reading aloud to someone in your family. Then, ask your family member questions about the text to see if they were listening! | Find 5 things in your home that have **acute angles**. Find 5 things in your home that have **obtuse angles**. Sketch and label these items! | Write your opinion on distance learning. How do you feel about learning from home? Do you like it/dislike it? Why? Write three reasons. I like/dislike distance learning. First, ____ because ____. Another reason I ____ is because ____. Finally, ____.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| Find 5 things in your home with lines that are **parallel**. Sketch and label these items! | Go on a walk outside. What are some **natural resources** that you see? What are some **physical features** of your area? Sketch and label. **Natural resources:** water, plants, sunlight. **Physical Features:** Mountain, hills, river. | Design your dream house. Draw and label rooms, furniture, and the fun features you would put at your house! | Write your own math problem and solve it. Then, write to explain how you solved it. **Example**: \( 468+782 = \) First, ___. Next, ___. Last, ____.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| Read two books. Compare/contrast the characters, setting, problem, solution, etc. using a venn diagram. | Use things around your house to create an invention to launch items into the air using **force**. How do you get items to go farther? Less distance? Higher? Sketch and label your invention. | Practice reading aloud to someone in your family. Then, ask your family member questions about the text to see if they were listening! | Find 5 things in your home that have **acute angles**. Find 5 things in your home that have **obtuse angles**. Sketch and label these items! | Write your opinion on distance learning. How do you feel about learning from home? Do you like it/dislike it? Why? Write three reasons. I like/dislike distance learning. First, ____ because ____. Another reason I ____ is because ____. Finally, ____.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
</table>
| Find 5 things in your home with lines that are **parallel**. Sketch and label these items! | Go on a walk outside. What are some **natural resources** that you see? What are some **physical features** of your area? Sketch and label. **Natural resources:** water, plants, sunlight. **Physical Features:** Mountain, hills, river. | Design your dream house. Draw and label rooms, furniture, and the fun features you would put at your house! | Write your own math problem and solve it. Then, write to explain how you solved it. **Example**: \( 468+782 = \)... | Write your opinion on distance learning. How do you feel about learning from home? Do you like it/dislike it? Why? Write three reasons. I like/dislike distance learning. First, ____ because ____. Another reason I ____ is because ____. Finally, ____.