

**Sweet Gum Upper Elementary Community
Distance Learning Plan & Digital Resources
Week of May 11, 2020**

Dear Sweet Gum Community,

Below you will find details for the Week Seven Distance Learning Plan. In creating this collection of activities, I was personally struck by how inventive humans can be. We are constantly discovering codes, patterns, and deeper meaning. We are constantly solving problems and finding clever ways to communicate through numbers, letters, colors and nature! Enjoy these projects. I look forward to learning about your discoveries!

The following subject areas include new activities and projects this week:

- **Reading** - Book Clubs Week Four and Making Inferences
- **Writing** - Sentence Analysis Exercises
- **Math and Geometry** - Number Sequences and Patterns
- **History** - Cryptography, The Science of Secret Writing!
- **Science** - Plant Colors & Natural Vegetable Dyes
- **Geography** - Seasons

If you have not tried every activity from Weeks 1-6, you can find downloadable links to these plans under the “Downloadable Weekly Plans and Resources” panel on the webpage. Previous weekly plans from Specialists are also available on the Specials webpage.

In service,

Ms. Isaza and Mr. Kendall

New Content this Week:

Daily Reading and Response Journal: Making Inferences

- Read a fiction book for a minimum of 1 hour per day. This book could be your new book club book, or an independent book you are already reading.
- Keep a response journal each time you read.
- This week, we will focus on **making inferences**. An inference is a conclusion that you make based on evidence from a story. For example, if you conclude that Harry Potter is a brave character, you should be ready to point to evidence in the book that shows Harry Potter doing something that requires bravery.
- Record in your journal:

- What is the mood or tone of the story? How can you tell?
- What do the main character's actions tell you about him/her/them?
- What would you like to ask one of the characters?
- What would you ask the author?

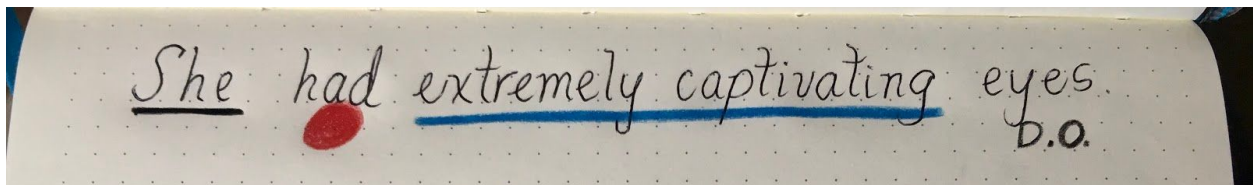
Writing Activity: Sentence Analysis

Although we are away from our classroom materials, we can still explore sentences in interesting ways at home! This week, let's analyze some sentences from our independent books. Follow the steps below:

- Find 10 sentences in your independent book or in various books around your home.
- Write each sentence on paper. Write one sentence per line, and skip lines.
- Identify the **subject** and **predicate** of each sentence.
 - Decorate the subject with a black arrow underneath.
 - Decorate the predicate with a red circle to symbolize the action.
- See if you can find a **direct object**.
 - Direct objects are noun phrases that receive the action in a sentence, answering the question "who is it that?" Or "what is it that?"
 - Write "D.O." beneath the direct object.
- See if you can find an **adverbial phrase**.
 - Adverbial phrases answer questions such as "where, how, or why?"
 - Draw an orange line underneath these phrases.
- See if you can spot an **adjectival phrase**.
 - Adjectival phrases answer the question "what kind of?"
 - Draw a blue line underneath these phrases.

See three examples below:

Note: Not every example has a direct object, an adverbial phrase, or an adjectival phrase, but all sentences have subjects and predicates.



She had extremely captivating eyes.

We made the most vibrant vegetable dyes
D.O.

from food scraps in the kitchen.

We made the most vibrant vegetable dyes from food scraps in the kitchen.

Mellifluous voices sang from the computer.

Mellifluous voices sang from the computer.

Math and Geometry: Number Sequences and Patterns

“Mathematics reveals its secrets only to those who approach it with pure love, for its own beauty.” — Archimedes

In an ancient Greek quest to understand the secrets of the universe, the quadrivium was born. In Latin, quadrivium literally means, “the place where four roads meet.” These four roads were: arithmetic, geometry, music, and astronomy. These four roads were built upon numbers.

Arithmetic was the study of pure numbers (Pythagoras believed some numbers were divine!)

Geometry is the study of numbers in space.

Music is the study of numbers in time.

Astronomy is the study of numbers in space and time.

Over time, the quadrivium became very important! Philosophers and scholars studied the quadrivium along with the trivium (grammar, logic, and rhetoric). The quadrivium was an essential part of a university education during the middle ages. We still draw from the ideas organized in this system.

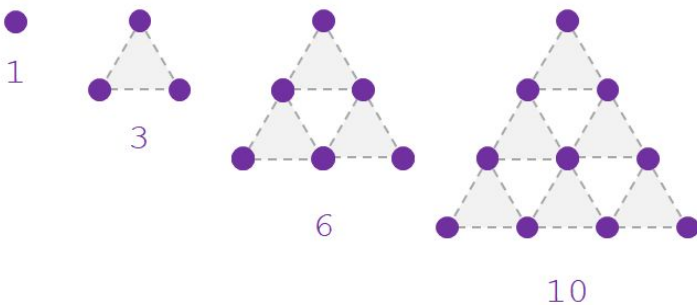
Mathematicians today celebrate the idea that humans are constantly discovering patterns and order in the universe. Mathematics is the work of inventing and using symbols to describe these patterns. This week, let’s be pattern seekers and make some discoveries of our own!

Below are a few examples of number patterns that humans have discovered. Perhaps you can make your own number pattern and quiz a friend to find the missing number in a sequence.

Triangular Numbers:

1, 3, 6, 10, 15, 21, 28, 36, 45, ...

Triangular numbers create a pattern of dots that form triangles:



$$1 = 1$$

$$3 = 1+2$$

$$6 = 1+2+3$$

$$10 = 1+2+3+4$$

Square Numbers:

0, 1, 4, 9, 16, 25, 36, 49, 64, 81, ...

These are probably very familiar to you! They are the squares of whole numbers:

$$0 (=0 \times 0)$$

$$1 (=1 \times 1)$$

$$4 (=2 \times 2)$$

$$9 (=3 \times 3)$$

$$16 (=4 \times 4)$$

Etc...

Can you write some other patterns?

-Cube numbers

-Fibonacci numbers

-Geometric Sequences (when you multiply a number by the same value each time)

-Arithmetic Sequences (when you add a number by the same value each time)

Perhaps you'd like to discover some of the patterns in Pascal's Triangle (see attachment).

Here is an example of a pattern I created. I left some blanks for you to solve. Can you find the missing numbers? Can you figure out the rule I used?

324, 108, ____, ____, 4, ____, ____, 4/27

Don't forget to visit Mr. Hurwitz's curriculum supplements on the Specials page! He has shared a number of printable packets that are grade specific.

History: Cryptography: The Science of Secret Writing!

The information below has been paraphrased. Ideas are originally from the work of Gary C. Kessler.

Cryptography is the science of secret writing. It is an ancient art. The first documented use of cryptography in writing dates back to circa 1900 B.C.E. when an Egyptian scribe used non-standard hieroglyphs in an inscription.

Some experts argue that cryptography appeared sometime after writing was invented. Uses for secret writing range from diplomatic missions to battle plans. Today, computer communication and the internet have invited new forms of cryptography. Clever students in elementary classrooms also use cryptography to send delightful messages to each other, and to puzzle their teachers!

There are five primary functions of cryptography:

1. *Privacy*: Ensuring that no one can read the message except the intended receiver.
2. *Authentication*: The process of proving one's identity.
3. *Integrity*: Assuring the receiver that the received message has not been altered in any way from the original.
4. *Non-repudiation*: A mechanism to prove that the sender really sent this message.
5. *Key exchange*: The method by which crypto keys are shared between sender and receiver.

Cryptographers start with unencrypted data, called *plaintext*. This could be a simple word or message in one's own language.

Then, the plaintext is encrypted into a *ciphertext*.

Ciphertext can be *decrypted* (turned back) into usable *plaintext*, with the correct key to "unlock" the scheme.

This week, study a famous type of code or encryption machine, or study some of the clever people who have used codes, or invent your own secret code! Below are some examples for further exploration:

- Substitution ciphers (e.g. Caesar cipher)
- Alberti's Disk
- Columnar transposition ciphers (these use a grid)
- Enigma machine (used by Germany during WWII)
- Alan Turing
- Navajo Code Talkers
- Morse Code
- Kryptos

Science: Plant Colors & Natural Vegetable Dyes



Whether you are navigating your History Time simulation with Mr. Kendall and imagining a distant North American past, or you are taking a walk through your neighborhood this May, plants are all around. They beckon us to notice them with colors that appeal to our sense of beauty and give us information about the nutrients and healthy substances they contain.

This week, let's explore how plant pigments can be used as natural dyes. Be sure you have your parent's permission before you begin this process. If you are making your own dyes this week, you will need to use a kitchen stove or hot plate, and your parents should be aware before you begin this process.

1. Make a list and then start to collect a variety of plants: roots, stems, leaves, flowers, fruits, and seeds! Make sure you ask your parents before you take any vegetables from the kitchen for this project. Below are some examples:
 - a. Onion skins - impart an orange dye
 - b. Basil leaves - purple-gray dye
 - c. Purple grapes - offer a blue-purple dye
 - d. The fruit of sumac - a soft red dye
 - e. Other: dandelions, plantains, dogwood, beets, etc.
2. Consider something you might like to dye. Below are some examples:
 - a. Plant fiber: a piece of cotton or linen

- b. Animal fiber: natural wool yarn
 - c. Boiled eggs
 - d. Watercolor paper
 - i. If you soak the paper in lemon juice or baking soda first, then dry, you will get different colors. Why do you think this happens?
3. **Make a dye bath:** chop one plant at a time and put the parts in a pot, keeping each plant part separate. Fill the pot with twice as much water as plant parts in the pot, completely covering the plant parts. Bring to a boil and then simmer for one hour. Let cool and then strain the plant matter. Pour the remaining liquid into a cup or bowl.
4. If you plan to dye fabric or an egg, you will need a *mordant* or *fixative* treatment before you add your dye. This step ensures that the dye will not wash away or fade. Below are details on how to do this:
- a. **Fabric:** submerge a piece of fabric in a vinegar bath by combining 1 part vinegar for every 4 parts water. Use a pot to simmer the fabric in the bath for 1 hour. Keep an eye on this process! Then, take out the fabric, rinse it with cold water, and wring it out to dry. Place the fabric in the dye bath next and simmer until the desired color is attained. Remove the fabric and rinse in cold water. Wring it and hang it to dry. Avoid using the drying machine because it could stain other clothing.
 - b. **Boiled eggs:** submerge boiled eggs in a cold dye bath with a fixative solution prepared by adding 1 TBSP of vinegar to every cup of dye. Put the submerged eggs with the dye/fixative solution in the refrigerator until you notice the color looks intense enough to you. Let the eggs dry, and then polish them with vegetable oil!



Work Cited and Book Recommendation:

Nardi, James. *Discoveries in the Garden*. Chicago, University of Chicago Press, 2018.

Geography Activity: Seasons

The information below has been paraphrased. Original ideas come from *Aquila Magazine*.

What is your favorite season? In Washington, D.C., we enjoy four seasons, but did you know this four-season calendar doesn't suit everyone? Nomadic people do not observe a growing season, so they often use astronomy to chart their calendars instead of the seasons. Many countries in the world only have two seasons, wet and dry. Some cultures feel the influence of prevailing winds more intensely and they use winds to determine the time of year.

The Bininj/Munguy people of the Kakadu region of the Northern Territory of Australia have six or more seasons, based on changes they measure in the rains, plants, creatures, and skies.

In Alaska, locals refer to three seasons: winter, still winter, and construction season! When temperatures warm up and the region experiences the increased hours of sunlight, builders can finally get to work!

And in the Amazon, there is no winter at all. Imagine that.

What causes the changes we observe in different seasons?

Simply put: Earth's tilted axis!

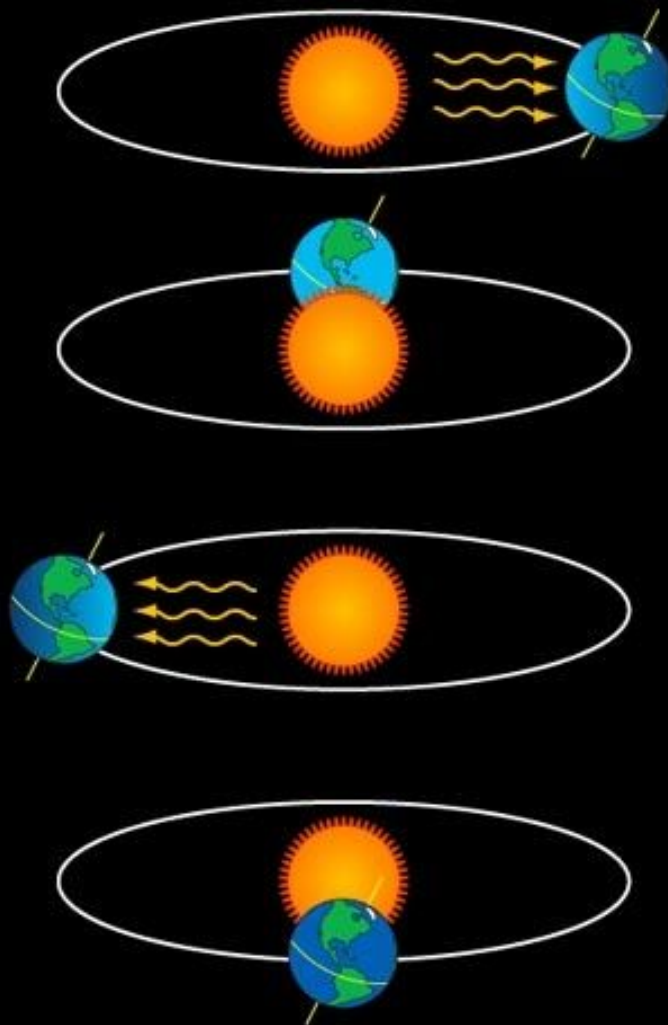
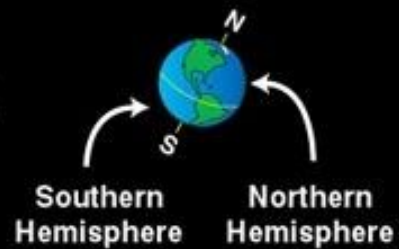
This week, make your own model to demonstrate this process at home. You can use foam balls, clay, wooden dowels, rods, or kabob skewers. You could even use a spherical piece of fruit and stick a skewer through it!

Imagine we are back in the classroom with our globe and unshaded lamp (sun) as you review the NASA graphic below.

Your model sun will be a stationary object that your model Earth will orbit. Hold the axis of the Earth on a tilt just as you see in the picture. The tilt remains the same angle the entire time, as you move the Earth counterclockwise around the "sun." Remember, the Earth rotates (spins) around its axis once per day and it revolves (orbits) around the sun once per year.

For more information on this topic, visit: <https://spaceplace.nasa.gov/seasons/en/>

Earth has seasons because its axis is tilted. Earth rotates on its axis as it orbits the Sun, but the axis always points in the same direction.



December:
Summer south of the equator,
winter north of the equator.
The Sun shines directly on
the Southern Hemisphere
and indirectly on the Northern
Hemisphere

March:
Fall south of the equator,
spring north of the equator.
The Sun shines equally on
the Southern and Northern
Hemispheres

June:
Winter south of the equator,
summer north of the equator.
The Sun shines directly on
the Northern Hemisphere
and indirectly on the Southern
Hemisphere

September:
Spring south of the equator,
fall north of the equator.
The Sun shines equally on
the Southern and Northern
Hemispheres

Weekly Content:

Writing Conferences:

Please reach out to Ms. Navarro by email at e.navarro@aidanschool.org if you would like to schedule a writing conference with her. She would love to hear what you are writing about these days and support your creative work!

Weekly Spelling List and Activity:

Parents, the lists attached are suggestions for the children. An old fashioned dictionary or independent reading books work fine to scout for new and interesting words instead of using the PDF lists.

Children, choose ten words to learn this week. Ideally these are words you use often but notice that you don't feel comfortable spelling in your own writing, or they can be words that trip you up while reading. As a backup, you can choose words from one of the high frequency lists, or new vocabulary you encounter through your own research.

Remember, new words will only stick if you use them, so practice multiple times and make sure they are going to be applicable in your work.

Once you have chosen words, practice spelling them correctly. Options for this include:

- **Word Wall Card**
- **Tiles:** spell with bananagrams tiles
- **Shaving Cream:** write in shaving cream using a silpat or tray
- **Skin/Air Writing:** trace the letters on your skin with a finger, tap each letter down your arm and then say the whole word, or write them in the sky using your whole arm
- **Stamp:** use an alphabet box to stamp the words with ink or into dough
- **Sand:** trace the words with your finger in a sand tray
- **Word Hunt:** search a book or the environment around you for each word and then record
- **Cirque du Soleil:** form each letter on the rug with your body
- **Chant:** chant each letters in a rhythmic pattern
- **Rainbow:** choose 3-5 colors and write the word in each
- **Story:** write a story/poem that includes all of the words
- **Teach:** teach someone else how to spell the word

Each time, make sure you:

1. Read the word aloud (while looking at it in written form).
2. Spell the word aloud, one letter at a time.
3. Attempt to spell without looking at the word (using one of the above methods).
4. Check that you spelled the word correctly.

5. Create a sentence that uses the word (aloud).

High Frequency Word Lists (see PDF)

Grade 4 List (see PDF)

Grade 5 List (see PDF)

Math and Geometry:

Khan Academy:

Parents, you are encouraged to create an account on Khan Academy for your child. The accounts are FREE. You may click the grade level links below to subscribe your child to a course under my teacher account page, where they can access learning content (video tutorials and activities) and I can view their progress through course content. Content is not lock-step, and it is self-paced. If you do not subscribe your child to the “courses” via the links below, I will not be able to view their progress or work, but the children will still be able to access the various tutorials and content.

Each day, your child should choose an appropriate topic to review/learn and practice. If this is their first experience on the Khan Academy platform, they may need some guidance finding an appropriate topic of study. In general, grade level topics should be familiar territory (e.g. a 4th Year should look through the 4th Grade content and select a topic).

If for any reason your child does not have access to a computer or you prefer to support their work differently, there are plenty of alternative ways to build math appreciation, number flexibility and to practice building skills. Please see the links below with further ideas (I recommend “Numbers Talks” at this [link](#) - once a parent knows how to have a number talk, these can make for fun, spontaneous conversations).

If you have simple tools at home (e.g. geometry compass, ruler, measuring cups, graph paper, protractor, thermometers, etc.) your child is encouraged to put those tools to good use! If you have workbooks at home (e.g. Kumon, Spectrum, Common Core Math) please feel free to use those instead of Khan Academy for skill practice.

Because each child’s math and geometry work is individualized at school, I understand that supporting this work can be a challenge outside of school. Please feel free to drop me a note for some guidance or assistance identifying the best fit for your child.

Khan Academy information letter to parents: [link](#)

Grade 4 Math Essentials Course [link](#)

Grade 5 Math Essentials Course [link](#)

Grade 6 Math Essentials Course [link](#)

If you are nostalgic (as I am) for our Montessori Math Materials, have a try at [extracting the square root or finding common multiples on the pegboard](#) VIRTUALLY, a new resource coded by a Montessori teacher's husband! This resource might be most fun for parents, to get a glimpse at how our materials work. A little tutorial can be provided if you request :)

Science:

Select a science project from this [link](#). Make sure you have the materials at home that are needed for your project of choice. Follow the instructions, collect data and observations, and write down your conclusions. Send photos of your process, or share your conclusions with me by Friday at j.isaza@aidanschool.org

Cooking:

Miss the Learning Kitchen? Here's how you can keep sharpening your cooking skills at home, even with limited ingredients:

1. Inventory your kitchen! Ask your parents which ingredients in your kitchen you're allowed to use for your project, write a list of everything you have access to, and email it to Mr. Kendall.
2. Get your recipe! Mr. Kendall will use your list to find a personalized recipe for you to try out at home (or find your own by entering your ingredients into SuperCook).
3. Cook! Be sure to ask for parental support with anything difficult or dangerous.
4. Record your results! Write down your observations about the process, noting things you enjoyed doing, things that were difficult (and why), things that went well for you, and things with which you struggled. If you'd like, take pictures!
5. Share your results with others! Share the finished project with your family, and share your notes with Mr. Kendall and the class.
6. Be sure to clean and sanitize any kitchen tools or surfaces after use.

Each week you'll be able to get another personalized recipe, so be sure to let Mr. Kendall know if there's something you're particularly interested in trying.

Care for the Home and Others:

- Plan a meal to cook or a recipe to bake. Be sure to clean the kitchen thoroughly upon completion, and return any tools and utensils to their proper home.
- Offer to care for any houseplants or family pets.
- If you have your own bookshelf, organize it by genre (e.g. fantasy, literary fiction, nonfiction, science fiction, poetry, etc.) or by author last name, or help a sibling organize their shelf.
- Wash and fold your own laundry.
- Offer to set the table for a family meal.
- Fix something broken (e.g. darning a sock).

- Ask an adult how you can help with a task (carrying groceries, taking out trash, etc.)
- Write a list of questions on paper slips and have the family draw questions from a bowl or hat to make for some interesting dinner conversation.
- Call someone lonely.
- Play with a sibling.
- Read aloud to a younger sibling.

Care for Self:

- Take a mindfulness break
- Do something creative (e.g. paint, draw, write a poem, build something, play music, make a booklet and decorate the cover)
- Prepare a healthy snack or smoothie
- Get some exercise (e.g. practice yoga)
- If you have the resources nearby, try some handwork (kumihimo, knitting, crochet, embroidery, origami, sewing)
- Learn something new from YouTube (see links below)
- Learn something new from someone else!
- Wash your hands often :)