Provided by tutor.com

Diving into Summer Challenge

Step 1

Fill up two glasses or containers of water. Label one glass "fresh water" and the other "salt water."

Step 2

Fill the one labeled "salt water" with ~6 tablespoons of salt, and feel free to increase if results aren't conclusive.

Step 3

Gently drop an egg into both glasses and see what happens. After trying this example, try adding other objects to the water, such as a jar or a bouncy ball, and see how those behave in the water.

Answer the following follow-up questions. Connect with a science tutor if you get stuck!

- 1. Which egg floats closer to the top?
- 2. What happens as you add more salt to the water?
- 3. When fresh water rivers meet the ocean, how do you think the waters interact?
- 4. Which body of water do you think it would be easier to float in, a freshwater lake or the ocean?





Understanding Beach Erosion

In science, you may have learned about erosion which is the process in which weather forces remove and move little bits of our earth's crust. Below is a quick little exercise you can do to better understand how our beaches currently erode!

Step 1

Grab your disposable paint tray, and fill the very bottom of it with a little bit of sand, and then cover that with water. You don't need to put too much water just yet!

Step 2

Take the sand or soil that you are using and pack it at the top end of the paint tray. If your tray is too steep, you can use some water to wet your materials to help stabilize things (similar to how you use wet sand when making a sand castle).



Did you know? Some coastlines are receding at up to 25 feet per year! The U.S. alone spends roughly \$150 million each year to combat this.



Understanding Beach Erosion

Step 3

Now that you have everything set up, you can fill up your water until it meets the edge of the sand that sits on the ramp of the tray. Once you do that, you can use your hand as a wave machine! Move your hand back and forth slowly, and watch as you create small ripples in the water.

Step 4

Look and see how the waves are interacting with the sand. Is your little stretch of land shrinking? Is more and more sand falling to the bottom of the ocean?

Step 5

Now that you can visualize the shoreline receding, take your pebbles and other materials and try engineering your own shoreline protection! There are no wrong answers here! Experiment and play around with different designs and see what works! And research online to see which models engineers already use!

Go Deeper: Brainstorm with a science tutor why beach erosion is such an important issue!



The Speedsters of the Ocean

Read the passage below, then answer some questions to test your knowledge! If you get stuck, connect with a tutor for help!

What do you think is the fastest sea creature? According to the National Ocean Service, the sailfish is widely considered one of the fastest sea creatures out there!

A sailfish is easily spotted due to the HUGE sail-like dorsal fin, which can often span near the entire length of its body! At its fastest, it can travel at a speed of up to 68 mph. By contrast, the fastest swimmers can only reach up to speeds of about 6 mph.

Often working in pairs or groups to hunt, sailfish will use teamwork and their fast speeds to disrupt schools of fish. They've even been seen using their long bills and huge dorsal fins to separate fish from one another!

Sailfish prefer to live in the warmer waters throughout both the Atlantic and Pacific oceans. And while they are related to other billfish species like swordfish, spearfish, and various marlin fish, the sailfish is not an endangered species.

Sailfish are beautiful and impressive creatures to see in the wild. Watching them zip by can take your breath away!

Questions

- Are sailfish herbivores, carnivores, or omnivores?
- How much faster is a sailfish than a top swimmer?
- By doing some research, what relatives of the sailfish are endangered species?
- Based on the passage above, are sailfish social creatures?





Fishy Math

Provided by tutor.com

Instructions:

Look at the chart below and answer some questions. Plus, learn some fun facts too!





Clown Fish 4 inches



Koi 20 inches

What is the median length of these fish?

What is the average fish length?

What is the range of fish lengths?

If we were to only look at freshwater fish, how much would the average length change by?

Here's a hint: There is a famous movie about one of these fish! Where did that take place?

Can't remember how to solve a problem? Get some help! Ask a math tutor for help finding median, average, and range! Have you ever heard of the saying, "I have the memory of a goldfish"? It turns out that's a myth! They actually have great memories, and some have even learned tricks!

Did you know? The

oldest known koi fish

lived to be 226 years

old!

There are over 70 different species of betta fish! They are often classified by color as well as fin size.

Clown fish actually communicate with each other by making popping and clicking noises!



Fishy Math Part 2 Provided by tuto

Instructions:

A group of students went to the aquarium and wrote down which species of fish they saw. Based on the measurements found to the right, as well as the students' reporting below, create a line plot, and then answer some questions.

Student 1: 3 Bettas, 1 Clown Fish, 1 Guppie			
Student 2: 1 Goldfish, 2 Neon Tetra	Neon Tetra		
Student 3: 2 Clownfish			
Student 4: No fish			
Student 5: 2 Goldfish, 1 Guppie	Betta Fish		
Student 6: 1 Betta, 1 Guppie, 2 Goldfish			



Clown Fish 4 inches

Guppie 1 inch



1 In 1.5 In 2[']In 2.5 In 3 In 3.5 In 4 In 4.5 In 5 In 5.5 In 6 In

What is the most common length found?

What is the least common length?

How many fish all together were found?

Deep Sea Adventure

Below is a depiction of the different layers of the ocean. The questions listed below will ask you to think about why the zones act the way they do:

Why do you think it gets darker the deeper you go?

Did you know?

According to the NOAA, more than 80% of the ocean is unmapped and unexplored!

In the sunlight zone, water can reach temperatures of over 90 degrees; meanwhile at the abyss zone, it drops down to just above freezing. Why do you think that is? (Hint: Think about how temperature works on the surface in your house!)

Many fish live in the sunlight zone because their main diet consists of plankton. Why do you think the plankton live in this zone? (Hint: Plankton have some striking similarities to plants, what could they be?)



Winter Surprise

Instructions:

Finish the poem below by circling the correct answers. Then, answer the questions that follow! If you are struggling to answer the questions, connect with an English tutor for more help!

Need

some

help?

On a cold winter's day,

Three months before (April, May, June),

A groundhog wants to play.

"It's spring," she thinks,

She looks up and (<u>blinks</u>, <u>says</u>, <u>hints</u>),

Then she climbs out and winks.

She looks to the ground,

It is her shadow she's (done, seen, found)!

For a six-week nap she's bound.

in the sentence "_____ her shadow she's found! a. They'll b. Won't c. It's

1. What contraction fits this

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2. In the line "For a six-week nap she's bound," the apostrophe in the word "she's" is used to show

a.A contraction of the words "she" and "is"

b. Possessive use of the word she

c.A contraction of the words "she" and "has"

3. In the line "On a cold winter's day," the apostrophe in the word "winter's" is used to show

a.A contraction of the words "winter" and "is"

b.Possessive use of the word "winter"

c.A contraction of the words "winter" and "has"

Contractions are all about merging two or more words into one with the help of an apostrophe!

Possessives help to show a relationship of belonging or ownership between one thing and another by using an apostrophe as well!

Finding Syllables



Instructions:

Search through your house to find objects matching the different syllable counts! If you're having trouble doing this, try the "Chin Method" or the "Listen Method."

Draw a picture or write the name of each object in the column.

				If you need help
1 Syllable	2 Syllables	3 Syllables	4 Syllables	understanding how to count syllables, connect
				to one of our live tutors and work with them!
				Don't know he chin methods he chin methods he chin methods he chin methods he chin methods he chin methods he count how many times your hand touches your chin! hat's the total number of syllables in the word hear on any times your hear on an individual yowel sound hear an an individual yowel sound

Understanding Poetry

Instructions:

One of the best ways to express yourself is through poetry! A good first step is understanding how to dissect and understand poems. To get started, read the poem below, and try answering these questions based off of your own interpretation of the poem. <u>If you are struggling to answer</u> the questions, connect with an English tutor for more help!



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What do you really know about exercise?

Exercise comes in many forms. From sports to riding your bike, even playing some interactive video games can count as exercise! But how does it work?

It's all about moving your body, and the more that you do it, the easier it gets! Now, just like a car, you have to give your body fuel, and the way that we do this is by eating! Our bodies convert that food into energy, which we measure as calories. So the more you move, the more fuel you burn!

Below are some common and fun activities that you can do for a little bit of exercise! Over the next couple of days, check off whatever activities you do! By the end of the week, see how many you've completed and compare with a friend.



Digging Deeper: Connect with a science tutor to learn more about how our bodies convert our food into energy!

SPACING

DESIGN YOUR VERY OWN SPACE STATION USING CARDBOARD!

HAVE YOU EVER WANTED TO EXPLORE OUTER SPACE?

Imagine that you and your friends got to spend a year together in your own space station! What would you need to live and be comfortable? Use the ideas you come up with to design your own space station.

SUPPLIES YOU'LL NEED

- Plenty of cardboard boxes
 Duct tape and a tape measure
 2 plastic cups
 4 straws
- Scissors or box cutters
- Paint (optional)

- 5 pipe cleaners

If you don't have access to these supplies, don't worry! Just grab a pen and a piece of paper. Be creative and draw your space station!

HOW TO GET STARTED

With the help of your parents, start using your materials to craft your new outer space home! Whenever you are using sharp tools, be sure to take safety precautions and have an adult present!

Here are some things to keep in mind when designing your space station:

- What do you need to make it comfortable to live in for an extended period of time?
- Which rooms will you need? Bedroom? Work space? Fun room?
- How many people do you want to accommodate?

And most importantly, have fun! This is your space station, so feel free to think outside the box and get creative!

YOUR RESULTS

Once you finished designing your space station, discuss your results with your friends and family! What features did you include, and what challenges did you face?

And remember, if you get stuck, you can always connect with a tutor for support!





LEARN HOW TO BUILD YOUR OWN MINI-BATTERY!

Do you ever wonder how your batteries work?

See if you can build your own battery that conducts electricity! While you won't be able to turn on your TV, you may be able to power a lightbulb!

Supplies you'll need!

- 4 lemons, 2 apples, and 2 potatoes Alligator clips
- 3 feet of copper wire
- Wire cutters
- Knife and cutting board
- Galvanized nails (12 or more)
- Copper pennies (12 or more)
- Small LED lightbulb
- A multimeter
- Notepad
- A small digital clock (optional)

How to get started!

- Set each piece of fruit on the table, and roll it with the palm of your hand to soften it up. You want the juices to be flowing, but you don't want the fruits skin to break.
- Make small inserts in the fruit with your knife.
- Attach copper wire to the nail and to a copper penny using your alligator clips.
- Insert the galvanized nail and copper penny into each piece of fruit you use, then connect them to the lightbulb using your copper wire.
 - The penny and the nails should be about 2 inches, or 5 cm apart. You don't want them touching each other, and you don't want to push your tools through the other end of the fruit!
- If the lightbulb doesn't light, attach the wire ends to the multimeter to see if you are generating electricity. Remember: You might have the wrong ends attached to the two wires on the lightbulb. You will have to switch them.
 - One side of the lightbulb is the positive side and the other is the negative.
 - If the multimeter is showing that you are generating electricity, try connecting to the lightbulb again.
 - You may need to troubleshoot the connection to the lightbulb or the amount/type of fruit used.



LEARN HOW TO BUILD YOUR OWN MINI-BATTERY!

How to get started - Part 2!

(+)

- Try this with as many fruits and vegetables or as many combinations as you'd like!
 - Hint: to generate more electricity, you can connect a wire from the penny on one piece of fruit to the nail on another piece of fruit. With this, you can daisy-chain a bunch of fruit!
- Don't forget to document your work! That is a sign of a great scientist after all!

Your results!

Feel free to post a pic of your electrical contraption online, and show off your scientific genius! Don't forget to tag us @tutordotcom when you do!

- Now that you've finished your science experiment, think about and discuss the following questions:
 - Why do you think some fruit combinations work better than others?
 - Does the penny represent the positive or negative charge? What about the nail?
 - How does electricity flow throughout your battery?
 - What is the most important component of battery design, and why can't we design batteries to hold their charge forever?

If you are struggling with this activity, head over to Tutor.com and connect with a tutor!



(+)

It's time to bring the **70's back!**

Share the memories of the 70's with your kids by creating homemade lava lamps!

Here is what you'll need:

- A water bottle
- Vegetable oil
- Water
- Food coloring
- Alka-Seltzer®

How to get started

- Once you're done drinking from your water bottle or soda bottle, clean it out and pour vegetable oil until you are about 2/3rds full.
- Next, fill the rest of the bottle with water until there is only a little bit of space left
 You should see that the water sinks under the oil.
- Add the food coloring of your choice. It is your personal lava lamp after all!
- Go ahead and stir your lamp using your prefered stirring utensil (shaking the bottle can disrupt the oil, making the final effect less impressive).
 - You should see that the food coloring only mixes with the water.
- Once you're ready, break up the Alka-Seltzer® and drop it in one piece at a time! Watch what happens and record it down in your notes.

Your results

Now that you've created your very own lava lamp, it's time to take a look at how it works! Some questions you should ask yourself:

Why does the water and oil separate?

Why does the food coloring mix with the water but not the oil? What role does the Alka-Seltzer play in getting the lava lamp to work?

Do you want to learn more? Connect with a Tutor.com tutor!



Learnallabout micro-fiction and how to write it!

Test your imagination and writing skills!

You will be writing micro-fiction which is another way of saying "very very short works". Remember that fiction comes from your imagination, so it doesn't have to be based in reality! Today you will create four stories that are 6, 25, 50, and 100 words long. We weren't joking when we said they were short!

How to get started

If you don't know where to begin, try reading some examples of micro-fiction online! Discuss and think about what makes some examples more interesting than others, and how this type of fiction differs from a standard novel or book. Try writing about a topic or interest that you are passionate about! Your four stories should be connected in some way so that you will create your own personal anthology.

Your results

Now that you've successfully created your own stories, you should print the results and share them with your friends and family. Also, think about the following questions once you are done:

- What did you like about writing micro-fiction?
- Did you find it challenging? If so, why?
- Do you prefer writing long pieces or short ones?
 - If you prefer writing longer ones, maybe give that a try!

If you are struggling with this activity, head over to Tutor.com and connect with a tutor!

LITERACY THERE'S MORE TO **CHECK!**

LITERACY THAN JUST **READING A BOOK**

We always think about it in terms of reading a book, but not everyone has time to do that! In fact, reading and literacy come in all different shapes and sizes. Below are just a couple of the different forms of literacy. Let's take a look and see how often you practice these. If you realize you don't practice these as often as you should, look them up and learn more!

7 DIFFERENT FORMS OF LITERACY



Reading and Writing

This is the form that most people think about when it comes to literacy. But in reality, it goes past just reading and writing. It includes the ability to understand the text and relate it to others, or expressing yourself by writing.



Digital Literacy

Can you meaningfully navigate and understand the technical world? If you can find information and engage with others online, then you are digitally literate. This is a super important skill for the 21st century!



Media Literacy

Whether you are reading the news, interpreting subtle messages in advertisements, or understanding the context of emojis, you probably demonstrate media literacy every day!





LITERACY THERE'S MORE TO **CHECK!**

LITERACY THAN JUST **READING A BOOK**



Visual Literacy

This is all about being able to understand and create images. This in some ways ties in to media literacy, since you are deciphering videos, photos, graphs and other information.



Financial Literacy

This can include creating a budget, tracking your expenses, planning for retirement, or even smart investing. Financial literacy is super helpful for those looking to be a bit more independent!



Emotional Literacy

Emotions can be complicated, and they impact every aspect of our life. This type of literacy is all about being able effectively listen as well as respond and give feedback in a healthy way, whether they take place in a written and verbal form.



Health Literacy

This entails understanding your body, both physically as well as emotionally. Health literacy can also encompass anything from researching care providers to understanding medication labels.

There are so many different types of literacy that you can practice. Connect with a Tutor.com tutor to learn more!



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SCAVENGER HUNT

Welcome to the Tutor.com Scavenger Hunt! We designed this activity to help you explore the many ways Tutor.com can support you with your homework and academic goals.



ACTIVITY 1:

Stuck on a problem? Connect with a tutor for homework help!

You can do this by logging in to your Tutor.com account. Getting connected is easy and fast, and expert tutors are available to provide 1-to-1 help 24/7.

ACTIVITY 3:

Did you know? Through the Tutor.com platform, you have access to SAT® and ACT® selfguided test prep from the Princeton Review- including full-length practice tests, detailed score reports, engaging video lessons, and helpful practice drills. If you have trouble with a problem, you can work through it by connecting with a live tutor. You can also get live tutoring in AP® subjects!

ACTIVITY 5:

Brush up on your skills with websites, flashcards, videos, worksheets, and sample tests in the SkillsCenter Resource Library. Whether it's biology, economics, statistics, or dozens of other topics, you'll find resources you can use for practice in a variety of subject areas!

ACTIVITY 2:

Don't have time to connect live? Submit a written assignment for expert review using Tutor.com's drop-off essay review feature. Upload a draft of your essay and get feedback within 12 hours!

ACTIVITY 4:

Want to test your math or science subject knowledge? Take a practice quiz on Tutor.com. Take note of the areas where you excel and the topics



where you need to spend more time studying. If there's a question you don't understand, don't understand, click to get live help right away.

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