



DREAM BIG

SUMMER

With

TIME 4 LEARNING®



We strongly urge parents to review the science prompts and to work closely with their student to ensure their safety.

SCIENCE

- Observe a habitat and write about it in a journal; include pictures or drawings, too
- Learn to identify the 3 states of matter by finding a solid, a liquid, and a gas in your home
- Use Legos™ to construct a model of the human heart
- Use a filled water dropper and a penny to explore surface tension
- Regrow new vegetables from the root ends of scraps such as celery, green onions, and lettuce by placing in a jar of water in a sunny window and changing the water every couple of days
- Understand more about lift, force, drag, and gravity by building different styles of paper airplanes



MATH

- Make 3D shapes with marshmallows and toothpicks or pretzel sticks
- Draw random shapes then measure and add up their angles using a protractor
- Learn a new math word and write down the definition
- Plan a family meal and figure out how much you are spending per person
- Pick a recipe and figure out how much more you need to double it
- Help your parents balance their checkbook





READING

- Read a book about a place you would like to visit
- Read a bedtime story to a younger sibling
- Read a book one of your parents read when they were your age
- Do a book swap with a friend and then share your thoughts
- Read a book with a character who has the job you want when you grow up
- Read a book with "How To" in the title



WRITING

- Hand write and mail a letter to a friend or relative
- I've always wanted to visit...
- Write a diary or journal entry
- Write a persuasive paragraph about something you want to do
- Write a poem on decorative paper and frame it
- Write an ad for an item you would like to sell





BONUS!

- Learn to use a compass
- Pick a fruit, vegetable, or herb to grow, and start a garden
- Draw a self-portrait
- Create a collage with pictures of family and friends
- Using playdough, construct a map of the state you live in
- Learn to make a simple stop-action video with a cell phone and action figures



IDEAS / NOTES



Determine what is needed to make the equations true. Some of the equations need parentheses, while others do not. Write in parentheses where needed or circle the equations that do not need them.

EXAMPLE

1. $(9 + 7) \times 4 - 12 = 52$
 $16 \times 4 - 12 = 52$
 $64 - 12 = 52$

2. $5 + 8 \times 2 - 4 = 22$

3. $7 - 1 + 55 \div 5 = 17$

4. $5 \times 4 + 9 - 2 = 27$

5. $15 + 8 - 4 \div 2 = 21$

6. $11 + 10 - 4 \times 9 = 65$

7. $7 + 13 + 6 \times 9 = 74$

8. $36 \div 6 \times 2 + 9 = 21$

9. $9 \times 21 \div 3 + 10 = 73$

10. $13 - 4 \times 18 - 22 = 140$

11. $16 + 21 - 3 \times 6 = 19$

12. $43 - 4 \times 4 + 8 = 35$



Who hasn't dreamed of becoming a secret agent—working on clandestine missions and intercepting secret codes? Here's your child's chance to work on her code breaking and writing skills while covertly developing her analytical thinking skills, too!

WHAT YOU NEED

- Pen and Paper

WHAT YOU DO

QBUN QUM NBY ZCLMN MUNYFFCNY NI ILVCN
NBY YULNB? NBY GIIH.

REAL: A B C D E F G H I J K L M N O P Q R S T U V
W X Y Z

CODE: UV... ABC...

1. Your budding secret agent has just intercepted the above code.
2. Ask her if she has any ideas about how to break this code. Have her spend a few minutes working on the code and check her progress. If she broke the code, you really have a future agent on your hands, so skip to step 5!
3. This is an example of a substitution cipher. Each letter of the alphabet has been substituted with a code letter. Substitution ciphers can have random orders and patterns that determine which letter was swapped for which. However, in this case, the alphabet was merely shifted. For example, if the alphabet was shifted 2 letters to the right (which it isn't in this case), the code letter A would really mean C, code letter B would really mean D, and so on. With this in mind have your code breaker take another stab at solving the puzzle above. Sometimes it helps to work on the short words first since there are only so many common short words in the English language (notice how NBY is repeated several times!).

4. Did she solve it? If not, it's time to give away the key. A key allows a code to be translated back into its original language. The key to this substitution cipher is that the alphabet has been shifted six places to the right. Have your child write out the alphabet as shown below, then fill in the code letters underneath (the first couple letters have been filled in. It helps visually if a vertical line is placed between each letter). She can then use her key to break the code by finding each code letter on the bottom line and substituting it with the real letter above.

5. Code broken? Well done. Now it is time to each try writing your own substitution cipher. Have your child write the alphabet again and decide (secretly!) on her substitution pattern. Have her fill the code letters under the real alphabet and use her key to write a secret message. You do the same. Swap messages and try breaking them without the key. When you can't stand it anymore, ask for the key and solve!

6. Advanced Code Breaking: If you have a code whiz on your hands, try writing and solving codes where the word spacing is no longer held intact. For example, group the letters in sets of four, so she can no longer use the short words to help break the code. Much more difficult, isn't it?



To get your child applying math to real-life situations, have her plan a fun night out for herself, and figure out the cost. Using money makes math matter in a big way! Plus, this activity will give your child the opportunity to feel like math can work for her, not against her. You don't need tail and a top hat to go out on the town—just a few math skills!

WHAT YOU NEED

- Pencil and Paper

WHAT YOU DO

Determine how much money you want to give your child for a fun night out. However, she can only get the money if she does the math correctly prior to the night out and does not exceed her budget.

2. Have your child write down her ideas for a fun night out. They must be very specific (i.e. movie, exact food items, etc.). Then have her find out the exact cost of each item on the list. Give her the sales tax for your area.

3. Now that your child has a list of activities with the cost of each one next to each activity, she is ready to do the math!

4. Have her take each activity and determine the cost of it, including the sales tax, if applicable. So, if one activity is to have a McDonald's happy meal, have her call to find out the cost. She will then multiply the cost by the correct sales tax percentage. So, if the meal is \$2.99 and the sales tax is 8% she would multiply 2.99 by .08 and find the tax to be .23. She would then add that to the 2.99, and the total cost of the meal is \$3.22.

5. After she does the math, check her work. If she has done it all correctly, give her the money for the fun night out and set up a date and time for it.

6. Don't forget to have her figure out how much she will have left over so when you ask for your change, you will know if she is trying to keep some for herself!

Extension Activity:

For older children, you can have them figure out how much gas it will take for you to bring them to and from their fun night out. Tell them how many miles per gallon of gas your vehicle gets. Find out the cost of gas per gallon. Now they will appreciate your taxi service!



As your young learner studies structures, he may hear that the strongest shape is the triangle. Put this architectural idea to the test by building two different newspaper towers with your child. He'll test and observe each structure's stability—trying his hand at engineering as he explores this important architectural concept.

WHAT YOU NEED

- Newspapers
- Masking Tape
- Heavy Desk Stapler
- Large Paper Plate
- Pennies

WHAT YOU DO

1. Your child will be building two towers, one made out of cubes (horizontal and verticals) and the other consisting of triangles (cubes with diagonal braces). Each tower will be two cubes tall. Start by helping your child roll newspaper into tubes. Take one sheet of newspaper, folded so that you see one full page. Roll from a short side, making a tube approximately one inch thick. Tape. Make 20 for each tower.

2. Using staples and tape, help your child make a cube. Take 8 more newspaper tubes, and build a second cube on top of the first. Reinforce the joints with tape. You have completed one tower, two cubes tall.

3. Repeat step 2 to build the second tower.

4. The braces are also of rolled newspaper but need to be slightly longer than the original

tubes. Take one sheet of newspaper, fold it so that you see one page and fold this page in half, top to bottom. Roll from one corner to other and tape to complete the brace. Repeat to make 11 braces.

5. Staple or tape one of these braces diagonally across each side, the top and the base of the bottom cube in the second tower. Repeat the process with the four sides and the top of the upper cube.

6. Do they both stand easily? It may take some shifting to get the one without braces to remain upright.

7. Place a paper plate on each tower. Add pennies until one tower topples. Which one turned out to be strongest? Why does he think that's the case?