

Activities to **GO**



January 2021

 **HCPLC** ORG
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Discover • Engage • Transform

AUGMENTED REALITY (AR)

Augmented Reality is a technology that expands our physical world by adding layers of digital content such as videos, animations, sounds and graphics. Remember *Pokémon GO*? The game was created using Augmented Reality.

Have Fun Coloring and using free mobile apps to experience Augmented Reality such as:

Quiver



Color Alive 2.0

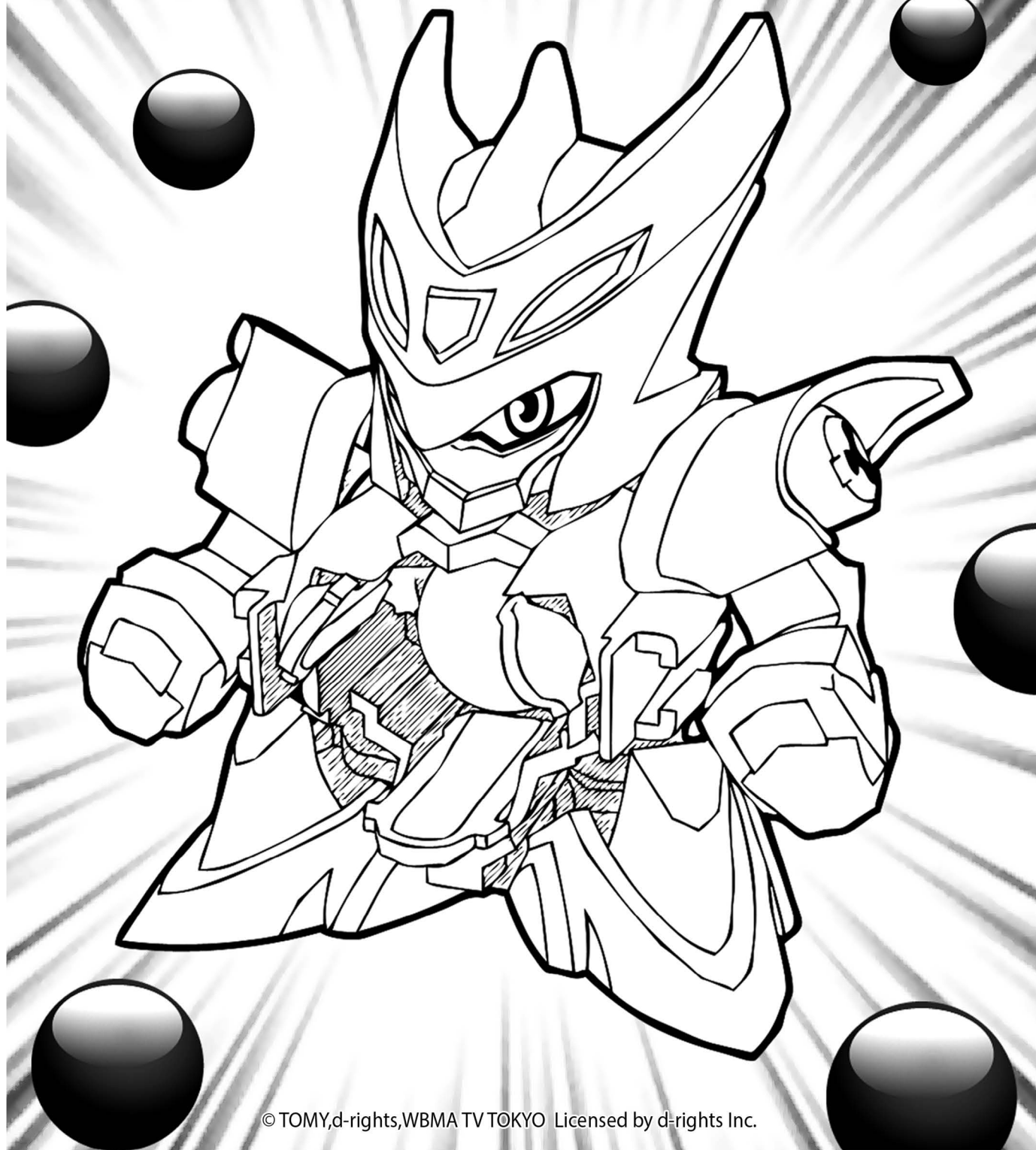


Print this packet and use the next two pages to get started! Instructions below:

| QUIVER | COLOR ALIVE |
|---|---|
| Android, iOS and Amazon Fire devices | Android and iOS devices |
| <i>B-Daman Coloring Page</i> | <i>Ironman Coloring Page</i> |
| Open your device Appstore (Google Play, App Store or Amazon Appstore) | Open your device Appstore (Google Play or App Store) |
| Search for Quiver | Search for Color Alive 2.0 |
| Tap to download the Quiver - 3D Coloring App | Tap to download the Color Alive 2.0 app |

B-DAMAN

ビダマン



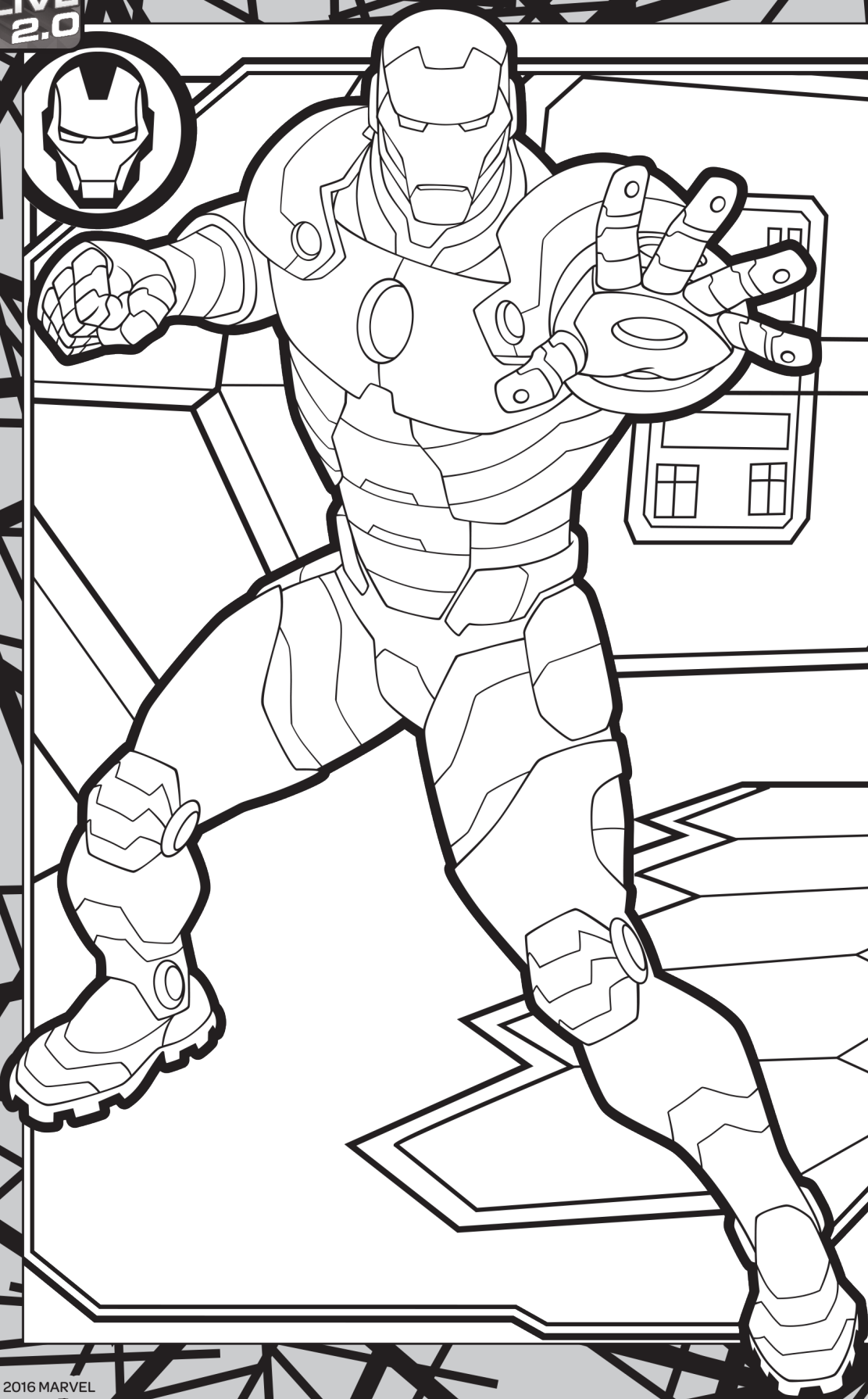
© TOMY,d-rights,WBMA TV TOKYO Licensed by d-rights Inc.

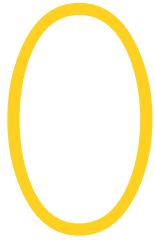


QuiverVision.com

- 1 Print
- 2 Color
- 3 Play

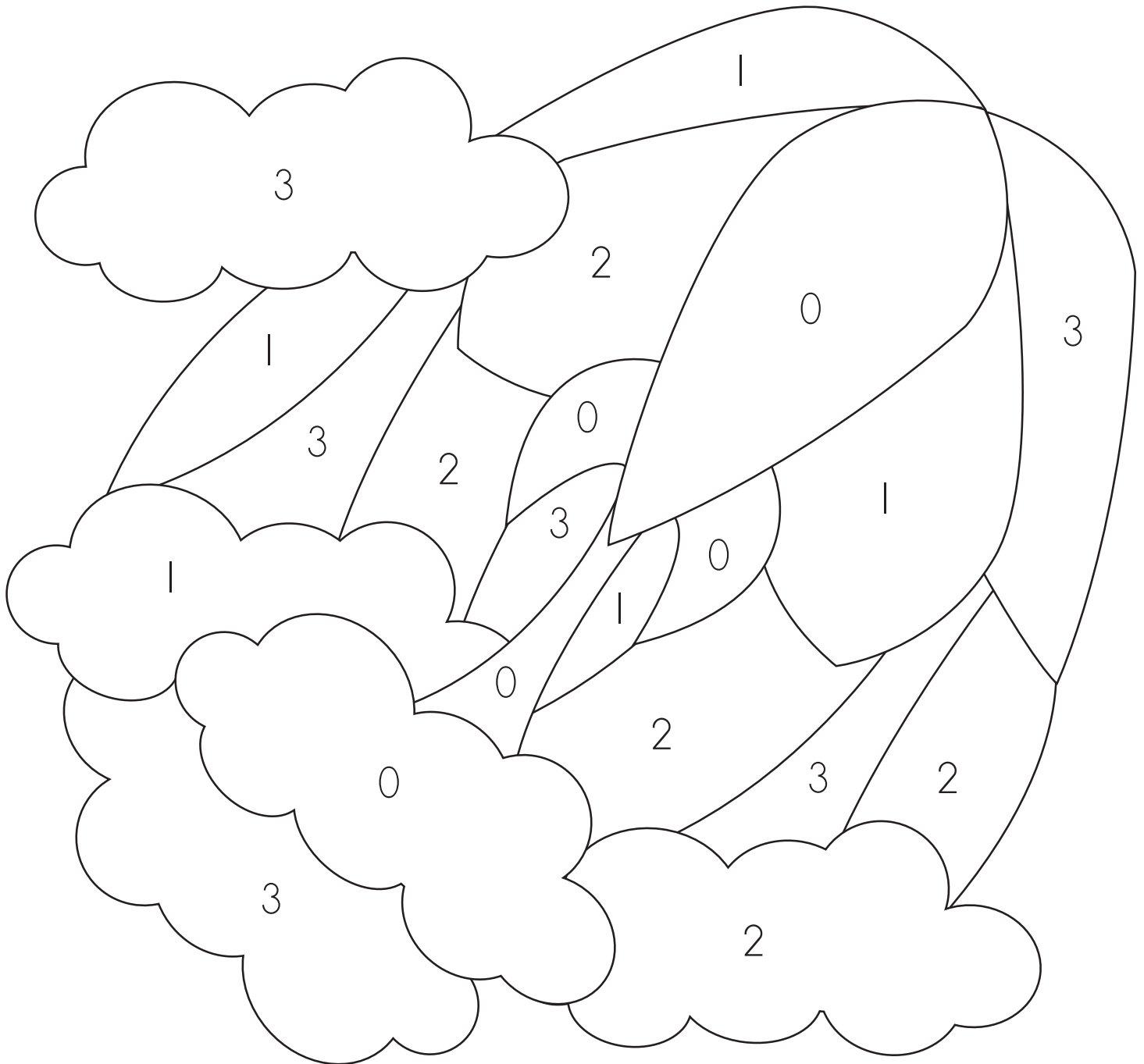
Crayola
**Color
ALIVE
2.0**





3, 2, 1, blast off!

Color the spaces with the number 0 to find a hidden rocket ship.

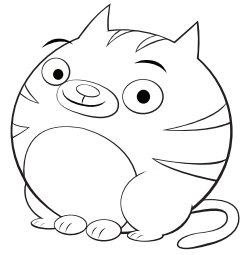


Can you count how many 0's are in the picture?

Name _____

Date _____

STEM Design Challenge Cards for Young Learners



Use these STEM design challenges to foster creativity and create new things! First, print these cards double-sided and cut them out. Next, choose a design challenge to complete with your family.



Create a maze for a marble using materials you have at home.

Design a structure that balances on your hand.

Build something that floats.

Design a structure out of rocks and natural materials.

Create a 3D sculpture with three different textures.

Use something light and something heavy to build something tall.

Create a ramp that makes toy cars go fast.

Design a fairy garden that keeps the rain out.

STEM Design Challenge Cards for Young Learners



Use these STEM design challenges to foster creativity and create new things! First, print these cards double-sided and cut them out. Next, choose a design challenge to complete with your family. (Back of cards - extension activities)



Extension

Now, can you create a structure that balances on your hand and is the same height as your hand?

Extension

Now, can you create a maze using only three household items?

Extension

Now, can you design a structure out of rocks and natural materials that is at least six inches tall?

Extension

Now, can you build something that floats and holds ten pennies?

Extension

Now, can you use something light and something heavy to build something at least a foot tall that doesn't fall down?

Extension

Now, can you create a 3D sculpture with three different textures that can hold something?

Extension

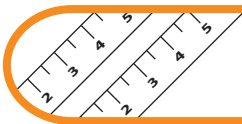
Now, can you design a fairy garden that keeps the rain out and makes bugs happy?

Extension

Now, can you create a ramp that makes toy cars go fast using something plastic?

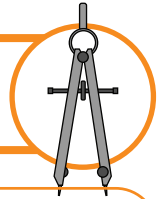
Name: _____

Date: _____

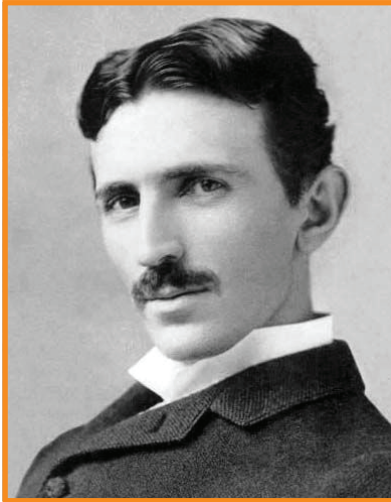


Nikola Tesla

Inventor and Engineer



Nikola Tesla was an inventor who helped develop the electrical system that we use today. He was born in 1856 in what is now Croatia, but eventually came to the United States to work with Thomas Edison, who was already well known for his advances in electric technology.



However, Edison and Tesla did not get along. Edison was interested in fame and money, while Tesla was only interested in his work. They parted ways and, in 1885, Tesla started his own company, the Tesla Electric Light Company.

In the ten years that followed, Tesla patented several inventions including the “Tesla coil” which was the beginning of wireless technology and is still used in radio technology today. In 1895, he designed an innovative hydroelectric power plant at Niagara Falls, which was able to power the entire city of Buffalo, New York. Tesla continued to discover, design, and develop new technologies-- but many of his ideas were patented by other inventors. In 1901, Tesla set out to build a world-wide

wireless communication system, but by 1917, funding for the project fell through and Tesla declared bankruptcy. He died poor in New York City in 1943, but his legacy lives on.

1. Why didn't Thomas Edison and Nikola Tesla get along?

2. List two of Tesla's inventions that we still use today.

Word Scramble

Unscramble these vocabulary words from the article. Then use the internet or a dictionary to find the meaning of each word.

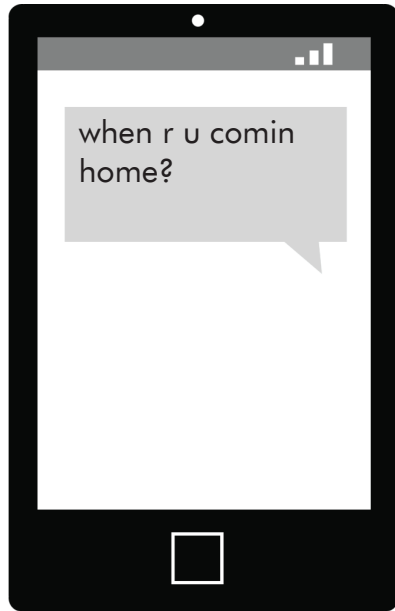
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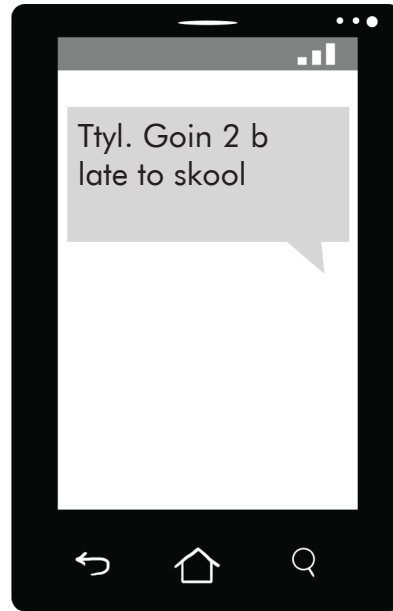
letyrhorccdei _____ y _____

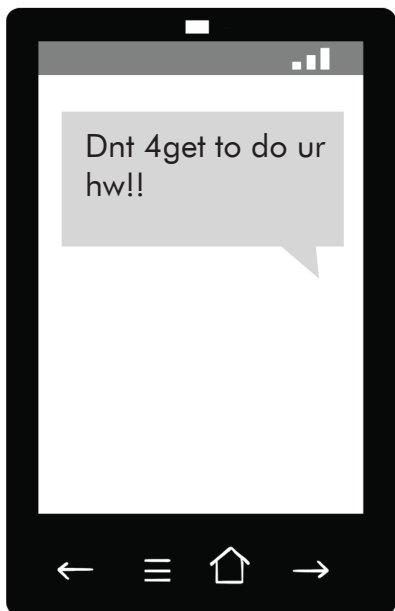
celgya _____ a _____

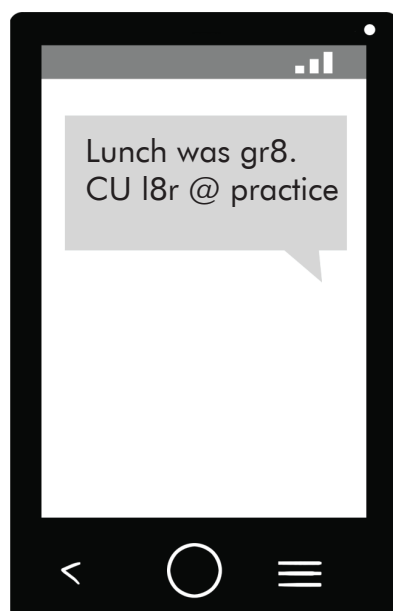
Gr8 Grammar

Correct the spelling and add correct punctuation to these text messages.









Create A New Programming Language

Grade Level: 9th - 12th; **Type:** Computer Science

Objective:

Create a new programming language that improves on the old ones. The goals of this project are:

1. To design a new computer programming language.
2. To create a presentation that illustrates the features of the various programming languages currently in use.

Research Questions:

- What are the basic qualities common to all computer programming languages?
- What programming languages are currently available?
- How are new programming languages developed?

A computer programming language is an artificial (deliberately created) language, designed to give instructions that are carried out by a computer. Thousands of programming languages have been created. This project challenges you to design a new or improved computer programming language.

Materials:

- Computer with Internet access
- Color printer
- Digital camera
- Typical office/hobby/hardware/craft supplies (paper, poster board, glue, etc.).
- Standard computer programming software

All necessary materials can be found in or around your home, at local stores, or on ebay.

Experimental Procedure:

1. Read overview of relevant topics (see bibliography below and terms listed above)
2. Address all of the above terms and research questions.
3. Search and print out interesting images relevant to your topic.
4. Take photographs throughout the course of the experiment.
5. Analyze at least three different programming languages.
6. Design a new or improved programming language.
7. Create a display that illustrates the features of your new language, and the way(s) in which it improves on other programming languages.
8. Include interesting photos, diagrams and models in your science fair display.

Terms/Concepts: Algorithm; Artificial language; Flowchart; HTML; Markup language

References:

- http://en.wikipedia.org/wiki/Programming_language (An overview of programming language)
- http://en.wikipedia.org/wiki/History_of_programming_languages (History of programming language)
- <http://en.wikipedia.org/wiki/HTML> (Overview of HTML language)
- http://en.wikipedia.org/wiki/List_of_programming_languages (Comprehensive list of programming languages).
- Internet searches of your choosing. Search words or terms listed here, or make up your own phrases. Click on any results you find interesting. Have fun surfing the net!



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