In this project, build on fundamental concepts such as, sequence, iteration, conditionals, variables, modularization, machine coding, and have the opportunity to explore Python, HTML, and other text-based programming languages. Many of the resources are still under development and will continuously be updated on our website.

A Magic 8 Ball is a “fortune telling” pool ball that can answer yes/no style questions. In this Spark activity you will be creating a Magic 8 ball using Python Programming. Go to go.illinois.edu/TBSC to access an online Python terminal:

First, test the terminal with the pre-polluted code. By default it will say "Print ("Hello, World"). When you click RUN, you will see the output on the right and it should say "Hello World". Now delete the contents in the terminal.

Next, import the random and time libraries. Do this by typing the following into the terminal (the numbers to the left are the line numbers):

1 import random
2 import time

Next, think of the question your 8 Ball will ask (yes or no) and type it in the terminal as follows:

3 question=input("What Yes or No question do you have?")

Next, create a list of responses for yes, maybe, and no. This will look like:

4 responses=['Yes!', 'Maybe!', 'No!']

Next, add a pause to simulate the computer thinking. In this case we are using 3seconds.

5 time.sleep(3)

Finally, write the code that will select your answer randomly from the list:

6 print(random.choice(responses))

Click Run, and watch your program come to life! Modify the code as necessary and feel free to add different responses.

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**Exploring 4-H Computer Science**

**Text Based Coding**

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Put Your Project Into Action

Show Your Skills
• Learn to create simple programs using Python and other similar programming languages
• Create story books and other storytelling programs using text based programming languages
• Create a video game capable of being played on computers or cell phones.
• Contribute to community projects that require simple programming

Service and Leadership
• Join a state-wide youth planning and operating committee
• Participate in one of the many nation/statewide opportunities available to 4-H youth
• Volunteer as a teen teacher to teach computer literacy skills to community members

Entrepreneurship
• Exhibit in Ready-4-Life at the county/state fair
• Participate in Maker-style challenges
• Start a website design business
• Develop an app for distribution on the App Store and Play Store

Technology Connection
• Artificial Intelligence
• Drones
• 3-D printing
• Robotics
• Advanced computing
• Internet of Things

Connecting with a Mentor
• Contact your local Extension Office to find potential content specific mentors in your area
• Contact local businesses and technology companies about potential internship possibilities

Events
• Robotics competitions
• Hack-a-thons
• County and state fair
• Google Chicago events and tours

Where to get started?
Activities & Curriculum

Raspberry Pi Code Club-

RpiCoderDojo LandingPage with All Projects-

Intro to Python: Variables, Functions, & Loops-

More Python: lists, dictionaries, and data-

Want to learn more?
https://4h.extension.illinois.edu/ways-participate/projects/computer-science-text-based-programming

Explore more at Illinois 4-H!
4-h.extension.illinois.edu

Careers Related to Computer Science

STEM
Programmer
Robotician

Engineer
Big Data Analyst
Developer

Put Your Project Into Action

Credits: 4-H Spark Sheets are a collaborative effort of 4-H staff, volunteers, alumni and teens from across Illinois. A big thanks to the many contributors and reviewers!