



LEGO ROBOTICS DAY CAMP



Camp Survey Key

Name: _____

The purpose of the following questions is to find out what you may have already learned about LEGO robotics, engineering, programming and teamwork. If you know the answer to the question answer it. If you do not know the answer, circle "I don't know". There are no grades, this just gives us an idea what we should learn about this week.

- 1) **Which is NOT part of good teamwork....**
 - a) *** When the smartest team member does most of the work.
 - b) When team members solve problems by "talking it out" and agreeing on a solution
 - c) When one team member suggests a solution to a problem and the other team members vote whether or not to try it.
 - d) I don't know

- 2) **If your robot's job is to move forward, turn left and lift up a candy bar, you would....**
 - a) Build the robot and program the entire thing and then try it.
 - b) *** Break the job into small steps and try each step before going on to the next.
 - c) You would ask another team how to do it.
 - d) I don't know

- 3) **Cross-bracing means...**
 - a) A way to program the robot to cross lines.
 - b) *** A way to make something you build stronger
 - c) A way to program the robot to not run into objects
 - d) I don't know

- 4) **Why would you want to use gears?**
 - a) To make the robot turn
 - b) Because you must have gears if you have motors
 - c) *** To make a flag spin and a wheel turn at the same time
 - d) I don't know

- 5) **A gear ratio of 1 to 3 would have a....**
 - a) 16 tooth gear connected to a 40 tooth gear
 - b) *** 8 tooth gear connected to a 24 tooth gear
 - c) 4 tooth gear connected to a 40 tooth gear
 - d) I don't know

- 6) **The RCX is attached to the motors with**
- LEGO bars
 - *** LEGO wires
 - LEGO axles
 - I don't know
- 7) **If you are trying to make a robot do a job, and something is not working, you should fix it by...**
- Changing all of the things you think are wrong and then test it.
 - Change one mechanical thing and one programming thing then test.
 - *** Change one mechanical thing or one programming thing then test.
 - I don't know
- 8) **Engineers use the scientific method to solve problems and answer questions. What order would a scientist do the following activities.**
- *** Watch & Wonder, Test & Tweak, Conclude & Congratulate
 - Test & Tweak, Watch & Wonder, Conclude & Congratulate
 - Conclude & Congratulate, Watch & Wonder, Test & Tweak
 - I don't know
- 9) **Draw a line from the question to the correct answer**
- | | |
|------------------------------------|-------------------|
| a) (B) How are we going to move? | A) Navigation |
| b) (A) Where are we going to move? | B) Locomotion |
| c) (C) What are we going to do? | C) Robotic Action |
| d) I don't know | |
- 10) **The light sensor allows the robot to...**
- See like a video camera
 - *** Measure differences in light shining on a surface.
 - Shine a light in front of the robot
 - don't know
- 11) **Which statement is not true about engineers.....**
- *** They usually work on problems by themselves not in teams.
 - They write down or use a computer to keep track of their progress on a problem.
 - They design things to make useful things for our world.
 - I don't know
- 12) **To follow a line you would program a robot to...**
- Measure the width of the line and program the motors to not go bigger than the line.
 - *** Use a light sensor(s) to give information to the robot's computer to tell if it was on the line or off the line.
 - Use a touch sensor to give information to the robot's computer to tell if it was on off the line because it bumped into something.
 - I don't know

13) One of the first jobs in problem solving is....

- a) Reading a book to find the answer.
- b) Taking a quiz.
- c) *** Breaking the problem into smaller parts.
- d) I don't know

14) Teams which solve problems well are teams that

- a) Do what the smartest, loudest, and oldest person says.
- b) *** Get ideas from every team member, talk about those ideas, and try them together.
- c) Breaking the problem into smaller parts, and each team member works only on their part
- d) I don't know

15) When programmers (people who tell computers how to do things) say "Looping" they mean....

- a) Make the robot move in circles
- b) *** Repeat a set of commands over and over
- c) Move a robotic "arm" in circles to lift things up
- d) I don't know

- 1) a
- 2) b
- 3) b
- 4) c
- 5) b
- 6) b
- 7) c
- 8) a
- 9) a – B b – A c – C
- 10) b
- 11) a
- 12) b
- 13) c
- 14) b
- 15) b**