Lab Certified

To prepare for this WizQuiz, kids should study the Game Board for clues, and make sure they know the names of the things they have worked with.

Which of the following are reasons to be at Wizbots?
    A. Because building robots is great fun
    B. Because you learn to program
    C. Because you can learn about building structures and mechanisms
    D. Because you can stretch your imagination
    E. <u>All of the above</u>

Which of the following subjects will you **NOT** learn on the Path To Mastery?
    A. Programming
    B. Structures
    C. Potato Farming
    D. Mechanisms
    E. Imagineering
    F. Ballroom Dancing
    G. <u>C and F</u>

Which of the following is **NOT** part of your Tool Chain?
    A. Computer
    B. Wizbench
    C. USB Wire
    D. <u>Hammer</u>
    E. Brick

Which of the following are EPIC Virtues:
    A. Experimental
    B. Irritating
    C. Persistent
    D. Competitive
    E. <u>A and C</u>

Fetch 2 of <axle, beam, peg, motor, touch sensor, bushing, brick>?

Explorer

Which of the following 2 letter prefixes will pop up key commands in the Wizbench?
    A. wz
    B. wb
    C. bw
    D. is
    E. <u>B and D</u>

What is the minimum number of pegs required to rigidly connect 2 beams?
    A. 1
    B. <u>2</u>
    C. 3

Which of the following is NOT a Wizbit:
    A. End Cap Connector
    B. Zoob Connector
    C. Pipe Attachment
    D. <u>Elbow Joint</u>

Which of the following does not complete the sentence: "With the Wizbench you can" ?
    A. Create programs from a program library.
    B. Import sounds
    C. Import images
    D. Create your own recordings
    E. Draw your own images
    F. Create and run programs
    G. Read the battery level and free space on the brick
    H. <u>Cook dinner</u>

Which of the following is not a Java keyword?
    A. while
    B. if
    C. then
    D. else
    E. never
    F. <u>C and E</u>
    G. D and E

Fetch <End Cap Connector, Zoob Connector, H-Connector, PVC T-Joint, Friction Peg, Cross-Peg>

Apprentice

Distance, Sound, Light, Color, Random, Troubleshooting

Which of the following statements about Random numbers is **False**?
- A. You can generate random numbers using wbReadRandom.
- B. Random numbers can help to make decisions.
- C. Random numbers can help to create unpredictable behavior.
- D. **All of the above.**

Which of the following statements are true?
- A. Sensors help the robot give output to its environment
- B. Sensors should only be connected to ports A, B, or C.
- C. Sensors always give exact and steady readings.
- D. **None of the above.**

When the robot is not behaving as expected, which of the following responses is appropriate:
- A. Scream
- B. Panic
- C. Blame your partner
- D. **Calmly go through the checklist of common problems**

Which of the following commands does not apply to a sensor:
- A. wbRead
- B. wbSetFloodLight
- C. isInRange
- D. isNotInRange
- E. **wbReadRandom**

Fetch 2 of the following: <Distance Sensor, Color Sensor, Light Sensor, Sound Sensor>

Maker

Line Following, Speed, Distance, Angular Velocity, Force, Torque, Power, Gear Train, Spur Gear, Screw Gear, Pulley

Which of the following equations correctly links power and torque?
   A. $V = D/T$
   B. $P = F/V$
   C. $P = T x R$
   D. $T = F x D$

Which of the following equations is false:
   A. $C = 2\pi r$
   B. $V = D/T$
   C. $P = T x R$
   D. $T = F x D$
   E. None of the above

In a gear train with a Drive gear of 10 teeth, and a driven gear of 20 teeth, what is the gear ratio?
   A. ½
   B. 2
   C. 30
   D. 10

If you want to make a robot travel faster, which of the following should you not do?
   A. Use a gear train with a high gear ratio
   B. Use a gear train with a low gear ratio
   C. Use smaller wheels
   D. Increase the power output
   E. A and C

Name the pieces: Pulley, Axle, Bushing, Spur Gear, Screw Gear

Imagineer

Boolean Logic, Variables, Arithmetic Relations and Operations, Compass Sensor, Magnetic Sensor, Rotation Sensor.

Which of the following is not a legal java statement?
   A. int i = 0;
   B. **boolean counter = 27;**
   C. counter++; // Where counter is an integer
   D. double sum = a + b * 25; // where a is an integer and b is a double

If you have a variable **a** set to 10 and a variable **b** set to 20, which of the following expressions are **false**:
   A. a < b
   B. a <= b
   C. a - b > 10
   D. a > b
   E. a != b
   F. **C and D**
   G. D and E

If a boolean variable **a** is **true**, and a boolean variable **b** is **false**, which of the following statements are **true**:
   A. a || b
   B. a == b
   C. a && b
   D. !a
   E. a ^ b
   F. **A and E**
   G. C and D

Which of the following statements is false?
   A. A rotation sensor reads motor position in degrees
   B. **A magnetic sensor reads the direction in degrees from magnetic south**
   C. A compass sensor reads direction in degrees from magnetic north

Which of the following statements about **feedback control** is false?
   A. Feedback control is used to command a robot to achieve a target setpoint (goal)
   B. Current sensor data is used to calculate the next command to achieve the goal
   C. Feedback control is implemented with a loop
   D. **All of the above statements are false**