

Are we like robots?

JEOPARDY

Parts of NXT	Parts of Human	NXT Movement	Human Movement	Humans Vs. NXT	Grab Bag
▶▶▶ Final Jeopardy ◀◀◀					
<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>	<u>100</u>
<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>	<u>200</u>
<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>	<u>300</u>
<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>	<u>400</u>
<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>	<u>500</u>

Parts of NXT 100

Name the part of the NXT which understands its program and follows it.

Question

Q: What is the NXT computer brick?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of NXT 200

Name the part of the NXT that
allows it to move

Question

Q: What are the motors?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of NXT 300

Name the part of the NXT that reads input from the surroundings

Question

Q: What are sensors?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of NXT 400

Name the part of the NXT that transmits signals between the NXT computer brick and the sensors

Question

Q: What are the wires?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of NXT 500

Describe the two different kinds of sensors

Question

Q: What are those that just detect the presence of a stimulus and those that can detect amounts of a stimulus?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of Human 100

This is the part of the human body which commands the rest of the body

Question

Q: What is the Brain?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of Human 200

This part of the human body allows us
to move

Question

Q: What are the muscles?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of Human 300

Give an example of a sensor in your
body

Question

Q: What is anything involved with the five senses,
temperature, etc?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of Human 400

This is what transmits signals between
your brain and the sensors and muscles
in your body

Question

Q: What is your nervous system?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Parts of Human 500

About this many muscles are required
for you to walk

Question

Q: What is 200?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

NXT Movement 100

This is where the NXT gets the information that it needs to move

Question

Q: What is from its program?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

NXT Movement 200

In order to move the robot, the robot's motors have to perform this kind of motion

Question

Q: What is rotation?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

NXT Movement 300

Name a situation in an NXT program that would cause a robot to stop

Question

Q: What is the duration of the movement coming to an end?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

NXT Movement 400

Name three different types of durations
you can give the movement of your
robot

Question

Q: What are unlimited, rotations, seconds, and degrees ?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

NXT Movement 500

Name two benefits of using a ear train
to move a wheel

Question

Q: What are increases in power or speed, or the linear
displacement of motion?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human Movement 100

This is where a human gets the
information that it needs to move

Question

Q: What is the brain?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human Movement 200

In order for you to move, your muscles have to do this

Question

Q: What is contract?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human Movement

300

These are the two main muscles involved in the bending of your elbow

Question

Q: What are your biceps and triceps?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human Movement

400

Your muscles move your bones by pulling on these, which attach to bones

Question

Q: What are tendons?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human Movement

500

If your elbow is bending, this action has to occur for it to stop

Question

Q: What is contraction of your triceps?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human vs. NXT 100

Signals that travel through the wires of an NXT travel through this part of the body in humans

Question

Q: What is the nervous system?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human vs. NXT 200

The touch sensor of an NXT is like this
part of a human

Question

Q: What is the skin or any area sensitive to touch?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human vs. NXT 300

The sound sensor of an NXT is like this
part of the human body

Question

Q: What are ears?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Humans vs. NXT 400

The light sensor of an NXT is like this
part of a human

Question

Q: What are the eyes?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Human vs. NXT 500

This is the main difference between how humans and robots decide to do something

Question

Q: What is the fact that humans can think about actions while the NXT reads its program?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Grab Bag 100

This is the name of the type of robot that we
program

Question

Q: What is a taskbot?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Grab Bag

200

If the circumference of a wheel is 8 centimeters, how far would a taskbot move if made to go for 13 rotations?

Question

Q: What is 104 centimeters?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Grab Bag 300

Give an example of a type 2 sensor

Question

Q: What are many?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Grab Bag 400

This is the major quality seen in Disney's WALL-E robot that we are unable to give to our robots

Question

Q: What is the ability to think?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Grab Bag

500

The ultrasonic sensor works by sending out a signal and judging how long it takes for that signal to come back. This is very similar to a process called echolocation performed by several animals. Give an example of one such animal.

Question

Q: What are dolphins, bats, toothed whales, certain species of shrews and oilbirds?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500

Final Jeopardy

List the steps involved in a person hearing a sound, then walking toward it.

Question

Q: Question HERE?

100	100	100	100	100	100
200	200	200	200	200	200
300	300	300	300	300	300
400	400	400	400	400	400
500	500	500	500	500	500