1) **Category – Parts of NXT**
   a) **100 points** – Name the part of the NXT that understands its program and follows it.
      i) **Solution** - What is the NXT Computer brick?
   b) **200 points** – Name the part of the NXT that allows it to move
      i) **Solution** - What are the motors?
   c) **300 points** – Name the part of the NXT that reads input from its surroundings
      i) **Solution** - What are the sensors?
   d) **400 points** – Name the part of the NXT that transmits signals between the NXT computer brick and the sensors.
      i) **Solution** - What are the wires?
   e) **500 points** – Describe the two different types of sensors
      i) **Solution** - What are sensors that simply detect the presence of a stimulus and sensors that detect the value of a stimulus?

2) **Category – Parts of Human**
   a) **100 points** – This is the part of the human body which commands the rest of the body
      i) **Solution** - What is the brain?
   b) **200 points** – This part of the human body allows us to move
      i) **Solution** - What are muscles?
   c) **300 points** – Give an example of a sensor in your body
      i) **Solutions** - What is anything involved with the five senses, temperature, etc?
   d) **400 points** – This is what transmits signals between your brain and the muscles and sensors in your body
      i) **Solutions** - What is the nervous system?
   e) **500 points** – About this many muscles are required for you to walk
      i) **Solutions** - What is 200?

3) **Category – NXT Movement**
   a) **100 points** – This is where the NXT computer brick gets the information it needs to know to move
      i) **Solution** - What is its program?
   b) **200 points** – In order to move the NXT, its motors have to perform this kind of motion
      i) **Solution** - What is rotation?
   c) **300 points** – This is a situation in an NXT program that would cause the robot to stop
      i) **Solution** - What is the duration of the movement coming to an end?
   d) **400 points** – Name three different types of durations you can give the movement of your robot
      i) **Solution** - What are unlimited, rotations, seconds, and degrees?
   e) **500 points** – Name two benefits of using a gear train to move a wheel
      i) **Solution** - What are increases in power or speed or the linear displacement of motion

4) **Category – Human Movement**
a) **100 points**: This is where a human gets the information it needs to move
   i) **Solution**: What is the brain?

b) **200 points**: In order for you to move, your muscles have to do this
   i) **Solution**: What is contract?

c) **300 points**: These are the two muscles involved in the bending of your elbow
   i) **Solution**: What are your biceps and triceps?

d) **400 points**: Your muscles move your bones by pulling on these, which attach to bones
   i) **Solution**: What are tendons?

e) **500 points**: If your elbow is bending, this action has to occur for it to stop
   i) **Solution**: What is contraction of your triceps?

5) **Category: Human vs. NXT**
   a) **100 points**: Signals that travel through the wires of an NXT are similar to signals that travel thorough this part of the body in humans
     i) **Solution**: What is your nervous system?

   b) **200 points**: The touch sensor of the NXT is similar to this part of a human
     i) **Solution**: What is the skin or any area sensitive to touch?

   c) **300 points**: The sound sensor of the NXT is similar to this part of the human body
     i) **Solution**: What are ears?

   d) **400 points**: The light sensor of the NXT is similar to this part of the human body
     i) **Solution**: What are the eyes?

   e) **500 points**: This is the main difference between how humans and robots decide to do something.
     i) **Solution**: What is that humans can think about actions while the NXT just reads its program?

6) **Category: Grab Bag**
   a) **100 points**: This is the name of the type of NXT robot that is programmed for this lesson
     i) **Solution**: What is a taskbot?

   b) **200 points**: If the circumference of the NXT wheel is 8 centimeters, how far would a robot move if made to go for 13 rotations?
     i) **Solution**: What is 104 centimeters?

   c) **300 points**: Give an example of a type 2 sensor
     i) **Solution**: What is a sensor that tells you how loud a sound is or another such example?

   d) **400 points**: This is the main quality seen in Disney’s WALLE robot that we are unable to give to our robots.
     i) **Solution**: What is the ability to think?

   e) **500 points**: 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.
i) **Solution:** What are dolphins, bats, toothed whales, and certain species of shrews and oilbirds?

7) **FINAL JEOPARDY** – List the steps involved in a person hearing a sound, then walking toward it.

a) **Solution:** What is the ears pick up the sound and send a signal through the nervous system to the brain telling it that a sound has occurred and where it occurred, followed by the brain sending a signal through the nervous system to the muscles of the body telling them to move in the direction of the sound?