SCIENTIFIC AMERICAN FRONTIERS

TEACHING GUIDE

Activity 3: Grades 5-8

Frontiers Pop- Quiz

Enter correct quizzes in the FRONTIERS drawing see below!

STUDENT: _____

TEACHER: _____

1) What device allows Alan to print out his anti-red eye periscope?

2) What are the benefits of being able to print out objects?

a) the ability to design your own creations
b) the ability to send your creations around the world digitally
c) the ability to test and refine your designs
d) all of these

3) Which one of these "wearable computers" has been tested by the scientists at MIT?

a) underwear that wirelessly communicates one's body temperature to the room's thermostat.
b) A jacket that tells you the name and address of people you encounter
c) Spacesuits that allow astronauts to receive wireless video data.
d) All of these.

4) What is one ethical dilemma that surrounds Brian Clarkson's attempts to record his entire life?

5) What is special about the violin bow Josh Bell uses?

6)What does the Hyperscore software do?
a) writes music all by itself
b) allows professional musicians to write at a higher level
c) allows even musically-untrained children to write entire symphonies
d) none of these.

7) What does Hyperscore use instead of formal musical notation?

a) colors
b) shapes
c)textures
d) all of these

8) What do the MIT students' robots have to do to win?

a) Destroy their opponent's robot.
b) Pull their own side of the balance beam down.
c) Knock their opponent off of the balance beam.
d) Push their own side of the balance beam up.

9) List the two design constraints on the machines the students may build.

10) Which design strategy is the ultimate winner?

a) A piston that jacks up the beam.
b) A carpet grabber that pulls the beam down.
c) A car with a telescoping arm.
d) A bulldozer that knocks off its competitors.

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Activity 3: Grades 5-8

Frontiers Pop- Quiz

1) What device allows Alan to print out his anti-red eye periscope?
(A unique printer capable of cutting sheets of plastic and metal)

2) What are the benefits of being able to print out objects?

a) the ability to design your own creations
b) the ability to send your creations around the world digitally
c) the ability to test and refine your designs
d) all of these*

3) Which one of these "wearable computers" has been tested by the scientists at MIT?

a) underwear that wirelessly communicates one's body temperature to the room's thermostat.
b) A jacket that tells you the name and address of people you encounter
c) Spacesuits that allow astronauts to receive wireless video data.
d) All of these. *

4) What is one ethical dilemma that surrounds Brian Clarkson's attempts to record his entire life?
(Privacy. People he meets or simply walks by may not wish to be permanently recorded.)

5) What is special about the violin bow Josh Bell uses?
(Picks up data about the way Josh plays the violin and sends it back to

the computer.)

6)What does the Hyperscore software do?
a) writes music all by itself
b) allows professional musicians to write at a higher level
c) allows even musically-untrained children to write entire symphonies*
d) none of these.

7) What does Hyperscore use instead of formal musical notation?

a) colors
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8) What do the MIT students' robots have to do to win?

a) Destroy their opponent's robot.
b) Pull their own side of the balance beam down.*
c) Knock their opponent off of the balance beam.
d) Push their own side of the balance beam up.

9) List the two design constraints on the machines the students may build.
(The robot can weigh no more than ten pounds and must fit in the box the parts came in.)

10) Which design strategy is the ultimate winner?

a) A piston that jacks up the beam.*
b) A carpet grabber that pulls the beam down.
c) A car with a telescoping arm.
d) A bulldozer that knocks off its competitors.