**CS Discoveries Unit 1 Exam - The Problem Solving Process**

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1. If you are identifying the problem you are trying to solve, figuring out what your constraints are and determining what success will look like, what part of the problem solving process are you working on?

Points: 1.0

a.\* define

b. prepare

c. try

d. reflect

2. If you are brainstorming and researching possible solutions, comparing pros and cons and/or making a plan, what part of the problem solving process are you working on?

Points: 1.0

a. define

b.\* prepare

c. try

d. reflect

3. If you are attempting to put your plan into action, what part of the problem solving process are you working on?

Points: 1.0

a. define

b. prepare

c.\* try

d. reflect

4. If you are comparing your results to the goals you set, determining what you can learn to do better next time, and/or identifying new problems that were discovered, what part of the problem solving process are you working on?

Points: 1.0

a. define

b. prepare

c. try

d.\* reflect

5. My partner and I have determined that we must design a boat out of foil that holds as many pennies as possible without sinking. What part of the problem solving process am I working on?

Points: 1.0

a.\* define

b. prepare

c. try

d. reflect

6. My partner and I discuss what we think will be the best way to build our boat to hold many pennies and write down what we are going to do. What part of the problem solving process are we working on?

Points: 1.0

a.\* prepare

b. define

c. try

d. reflect

7. My partner and I build our boat and test to see how many pennies our boat will hold. What part of the problem solving process are we working on?

Points: 1.0

a.\* try

b. define

c. prepare

d. reflect

8. My partner and I looked at our results and determined what we could improve on our boat if we built another one. What part of the problem solving process are we working on?

Points: 1.0

a.\* reflect

b. define

c. prepare

d. try

9. In lesson 3, you were asked to solve a word search, organize party seats in a classroom, and plan a trip of your choice that could only last one school day. What made solving the word search easier to solve than planning the trip?

Points: 1.0

a. The problem was already clearly defined in the crossword puzzle

b. Most people already knew how to do the crossword puzzle so it didn't take as much discussion and compromise to complete

c. There were more constraints to consider and goals to create and reach when planning the trip

d.\* All of the other choices are correct

10. What are the benefits of getting peer feedback on any plan developed when preparing to solve a problem? Select **ALL** that apply

Points: 5.0

a.\* Another group might catch flaws in the logic of your plan

b.\* Another group might give you suggestions about a constraint you had not considered in your original plan

c. Another group will make you feel good by telling you what a great job you did

d.\* Another group may give you some suggestions on another approach for solving your problem in a way your group had not considered

e. Another group may make you feel bad about what you may have missed in your plan

11. What is a computer?

Points: 1.0

a.\* A machine that can solve informational problems

b. Anything that computes

c. A machine that can go on the internet

d. A machine that can solve any problem

12. What are some ways information is input into the computer? Select **ALL** that apply.

Points: 5.0

a.\* tapping on a touch screen

b.\* typing on a keyboard

c.\* clicking on a mouse

d. printing out a document

e. seeing a picture on the screen

13. What are some ways information is output from a computer? Select **ALL** that apply

Points: 5.0

a.\* A document shows up on your monitor

b.\* music comes out of your speakers

c.\* You print out your essay

d. You type on a keyboard

e. You tap on your touch screen

14. Which of these are examples of information being processed in a computer? Select **ALL** that apply.

Points: 5.0

a.\* Clicking on an icon takes you to the program

b.\* You push a button and speak into your cell phone and your phone translates what you have said into a text message (voice to text)

c. You see a picture on your screen

d. Your Google Drive has documents

e.\* You tap on a button on your screen and your camera changes from pointing in front of you to selfie mode (facing you)

15. What general types of information does a computer store? Select **ALL** that apply.

Points: 4.0

a.\* programs or apps

b.\* documents

c.\* photos / images

d.\* the date and time

16. What does an algorithm have to do with processing? Select **ALL** that apply

Points: 4.0

a.\* Algorithms are the steps that would be converted into a program that a computer could use to process information, changing it from input to an output.

b. Algorithms are a series of steps

c. Algorithms are the steps that would be converted into a program that a computer could use to process information, changing it from output to input.

d. Algorithms have nothing to do with processing

17. A precise sequence of instructions for processes that can be executed by a computer is called a(n) ...

Points: 1.0

a.\* algorithm

b. input

c. output

d. process

18. Why is it important for a programmer to write out an algorithm before trying to program it? Select **ALL** that apply

Points: 4.0

a.\* The algorithm helps to make sure he/she doesn't miss any steps when coding the program

b.\* The algorithm can be used for debugging purposes if the programmer is having trouble finding the error in his or her code

c.\* The algorithm might help a programmer find errors in logic before the program even starts to be coded

d. It is not important for programmers to design algorithms before coding.

19. Which of these is a problem that a computer CANNOT solve

Points: 1.0

a.\* Getting rid of racism

b. Making a game for entertainment

c. Getting news out to the public quickly

d. Helping architects build models of new buildings

20. If I wanted to design an app for world peace, what problems could a computer help me to solve? Select **ALL** that apply

Points: 5.0

a.\* Ranking countries and their peacefulness based on war history, taking into consideration World War participation, Civil Wars, number of years at war over the last 100 years and total deaths as a direct result of war over the last 100 years

b.\* Create a forum where people wanting to promote world peace can meet and discuss strategies.

c.\* Design an interactive map where people can see where war is taking place

d. Make the leader of a country change his/her mind about going to war

e. Stop a war that is currently happening