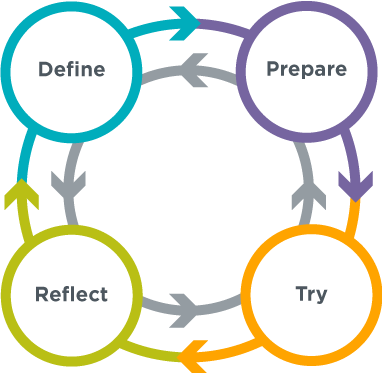
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**CS Discoveries – U1 L02 – Penguins Solving Problems Analysis**



Directions: Watch the video on two penguins on the tundra encountering a problem and how they were able solve their problem. Use the four steps in the Problem Solving process to analyze the steps that the penguins used to solve the problem.

Watch the Video: <https://www.youtube.com/watch?v=xg8iq_t9Tb4>

Make sure to watch the first 1:23 of the video where the penguins on the tundra encounter a problem and then overcome it.

1. ***Define*** the problem that the penguins face. Make sure to write in complete sentences and have specific details of the problem and not a vague response.

The penguins were waddling around until they come upon a stream which is blocking their way. The problem that the two penguins were faced with was to try to get over the stream without getting wet.

1. By observing the penguins behavior and their movement (or if they could talk), what did they do to ***prepare*** to solve the problem? What were they doing to show you that they were ***preparing*** to solve the problem? Write in complete sentences and have specific details of the problem and not a vague response.

The first thing the penguins did to solve their problem was to observe the situation. Then they figured out two ways to cross the water. The first penguin tried the first solution and it was successful. Then afterwards the second penguin tried the next solution and it worked.

1. What did the penguins ***try*** to do to solve the problem? Look closely, what did they try to ensure success of crossing the water? Write in complete sentences and have specific details of the problem and not a vague response.

The main thing that the penguins noticed for success of crossing the water was that the more land that is coming out of the main area of land on the other side, the less amount of water that is needed to cross.

1. After the penguin who was in the back walked over the little grassy bridge, explain how the other penguin ***reflected***. What was that second penguins decision? Write in complete sentences and have specific details of the problem and not a vague response.

The second penguin’s decision was to jump over a smaller area of the stream instead of choosing the easier path which was crossing the tiny land bridge. The second penguin saw what the first penguin was doing and he then tried improving the plan and testing the new one.

1. What thought process do you think the penguin who was in front (on the left of the screen) went through as it was last and jumped the water after the first penguin? Remember, this penguin was the leader/up front, but was the second penguin to cross the water. Why do you think it jumped instead of walking over the little grassy bridge? Write in complete sentences and have specific details of the problem and not a vague response.

The second penguin that crossed probably jumped over the water instead of crossing the bridge to impress his friend with his jumping and creativity skills. Another reason of why the second penguin jumped over the stream instead of crossing the bridge is since it was too scared to cross the bridge. It might of thought that there would be a bigger chance of him falling in the stream than him jumping.

**Problem Solving Robots**

1. Data shows that at least 35 orders are being placed in Amazon per second. It has giant warehouses (1 million sq. ft.) where all the stocks are stored. Still we receive the orders within a day or two. How do you think they fill up the orders placed by us in Amazon?

1. What do you think is the problem faced by Amazon to fulfill those orders

I think the main problem that Amazon faces to fulfill those orders to the customers is that there are a lot of orders which they have to finish in a short amount of time.

1. How do you think they are solving it?

The way that Amazon is solving their problem with the amount of orders is by building a lot of robots which are more efficient in organizing the different millions of orders than humans.

1. Watch this video and answer the questions below.

Video 1: <https://www.youtube.com/watch?v=HSA5Bq-1fU4>

1. What are the problems that are solved by these robots and how is it solving it?

One problem that the robots at Amazon warehouses are solving is the efficiency of finishing and sending the orders. The robots are solving this by quickly changing the different tasks they are given instantly. They can go around the facilities quickly and get every object needed for the orders faster than people.

1. Is there any functionality that you think would make this robots even more useful or powerful? What would it be? I think one way to make the robots more useful is to make the motors faster. I think the motors should be faster because they have so many orders to fulfill and such short time that they need to be able to move fast from every area to another. Another reason of why the motors should be enhanced is because the warehouse is huge. The way I know this is in the video it said that facilities can be at most 1.25 million square feet or 23 football fields which is very big.
2. Is it a positive thing that robots are taking the jobs once done by humans? Why or Why not?

In my opinion it is a good thing that the robots are taking jobs that humans used to do because they are more quick and smarter than people who do it themselves. The robots can remember the orders and get every single object immediately. The robots will also give more jobs to more people because the robots have to be constructed then they have to be trained and graduated which will need a lot of people, making more jobs.

1. Watch this video

Video 2: <https://www.youtube.com/watch?v=4DKrcpa8Z_E>

1. How are the robots from video 1 and video 2 different?

The robots in video 1 pack different items like clothes, toys or anything else except for food while the robots in video 2 pack groceries.

1. How are they the same?

Both of the type of robots are moving around on a type of trail. The Amazon robots move along on these pale roads which are around the warehouse and the Ocado robots move around using a grid system.