

What is an Algorithm?

Textbook

What is an Algorithm?



Bicycles are fun to ride, but even more fun to build. But, they have to be built in the right order. If you put the wheels where the handlebar goes, it won't go anywhere!. An algorithm works just like that—a set of instructions that helps you do something the right way! Whether it's solving a puzzle or getting a task done, algorithms help us stay organized and complete things in the correct order. Let's explore how these step-by-step instructions work!

Following Steps

An **algorithm** is a set of instructions or steps that help us complete a task. It's like a recipe or a set of rules for solving a problem. Algorithms are everywhere! They guide us in everything from making a sandwich to playing a video game.

Let's think about planting a flower in your garden. Here's an example of an algorithm you can follow:

1. **Choose a sunny spot** in your garden.
2. **Dig a small hole** in the soil.
3. **Carefully remove the flower** from its pot.
4. **Place the flower** into the hole.
5. **Gently pat the soil** around the flower.
6. **Water the flower** to help it grow.

Each step you follow to plant the flower is like an algorithm. It's important to do each step in the correct order. If you skip a step or mix them up, your flower might not grow as well as you hoped!

Incorrect Order

What happens if the steps aren't in the right order?

- If you forget to water the flower after planting it, the flower might not get enough moisture to survive.
- If you water the flower before placing it in the hole, the soil might wash away, exposing the roots.

Just like following a recipe, following the steps in the correct order helps us achieve the best results. The same goes for algorithms—they guide us to do things in the best way possible.

Critical Thinking Questions

1. Why is it important to follow the steps of an algorithm in the correct order?
2. Can you think of another example where you use an algorithm in your everyday life? What steps do you follow to make sure it's done right?

Questions (5)

1. What is an algorithm?

MULTIPLE CHOICE

Choose the correct answer:

- A. A magic spell
- B. A set of instructions to complete a task
- C. A random sequence of actions
- D. A type of puzzle

2. What happens if the sequence of steps in an algorithm is not in the correct order?

MULTIPLE CHOICE

Choose the correct answer:

- A. The algorithm will run fine
- B. The algorithm will work faster
- C. The algorithm will not run

3. What is the correct order of steps for planting a flower?

MULTIPLE CHOICE

Choose the correct answer:

- A. Dig a hole, water the flower, remove the flower from its pot
- B. Choose a sunny spot, pat the soil around the flower, dig a hole
- C. Water the flower, choose a sunny spot, pat the soil around the flower
- D. Choose a sunny spot, dig a hole, remove the flower from its pot

4. Which of the following would be the first step in painting a fence?

Choose the correct answer:

- A. Apply paint to the fence
- B. Let the paint dry
- C. Gather supplies

5. What is the correct sequence of steps for getting ready for school.

Choose the correct answer:

- A. Eat breakfast, brush your teeth, get dressed, wake up
- B. Wake up, eat breakfast, get dressed, brush your teeth
- C. Brush your teeth, get dressed, wake up, eat breakfast
- D. Get dressed, wake up, brush your teeth, eat breakfast

Games (2)

1. What is an Algorithm? Ordering Game

[Full Screen](#)
[Audio](#)
[Instructions](#)
[Answer Key](#)
[Pause](#)
[Clear All](#)
[Check Matches](#)

Attempts: 0

Choose a sunny spot in your garden.

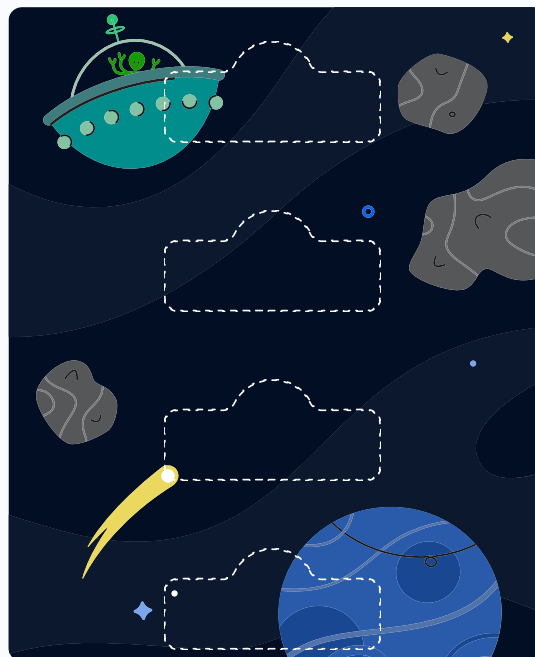
Place the flower into the hole.

Carefully remove the flower from its pot.

Water the flower to help it grow.

Gently pat the soil around the flower.

Dig a small hole in the soil.



2. What is an Algorithm? Typing Game


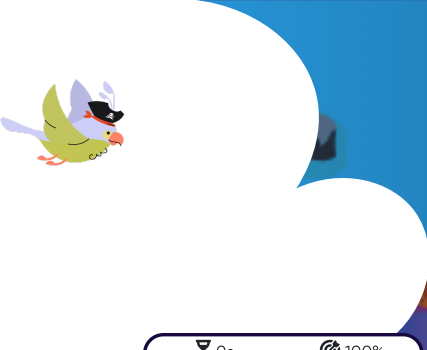
Full Screen

Audio

Instructions

Restart

Pause



0s 100%

Algorithms help us solve |

Answer Keys & Solutions

Questions

1. What is an algorithm?

MULTIPLE CHOICE

Correct Answer:

- A. A magic spell ✗ Incorrect
- B. A set of instructions to complete a task ✓ Correct
- C. A random sequence of actions ✗ Incorrect
- D. A type of puzzle ✗ Incorrect

Explanation:

How does the textbook describe an algorithm?

2. What happens if the sequence of steps in an algorithm is not in the correct order?

MULTIPLE CHOICE

Correct Answer:

- A. The algorithm will run fine ✗ Incorrect
- B. The algorithm will work faster ✗ Incorrect
- C. The algorithm will not run ✓ Correct

Explanation:

Think of the flower example. If a flower isn't planted in the correct order, it might struggle to grow.

3. What is the correct order of steps for planting a flower?

MULTIPLE CHOICE

Correct Answer:

- A. Dig a hole, water the flower, remove the flower from its pot ✗ Incorrect

B. Choose a sunny spot, pat the soil around the flower, dig a hole

✗ Incorrect

C. Water the flower, choose a sunny spot, pat the soil around the flower

✗ Incorrect

D. Choose a sunny spot, dig a hole, remove the flower from its pot

✓ Correct

Explanation:

Review the textbook example

4. Which of the following would be the first step in painting a fence?

MULTIPLE CHOICE

Correct Answer:

A. Apply paint to the fence

✗ Incorrect

B. Let the paint dry

✗ Incorrect

C. Gather supplies

✓ Correct

Explanation:

You need materials to complete the task.

5. What is the correct sequence of steps for getting ready for school.

MULTIPLE CHOICE

Correct Answer:

A. Eat breakfast, brush your teeth, get dressed, wake up

✗ Incorrect

B. Wake up, eat breakfast, get dressed, brush your teeth

✓ Correct

C. Brush your teeth, get dressed, wake up, eat breakfast

✗ Incorrect

D. Get dressed, wake up, brush your teeth, eat breakfast

✗ Incorrect

Explanation:

What would you do first to get ready?

1. What is an Algorithm? Ordering Game

Correct Order:

1. Choose a sunny spot in your garden.
2. Dig a small hole in the soil.
3. Carefully remove the flower from its pot.
4. Place the flower into the hole.
5. Gently pat the soil around the flower.
6. Water the flower to help it grow.

Scoring:

- Gold: 1 attempts or fewer
- Silver: 2 attempts or fewer
- Bronze: 3 attempts or fewer

Students must arrange items in the correct sequence.

2. What is an Algorithm? Typing Game

Typing game - no answer key needed. Students practice typing the provided content.