

STEM from Home

Cylinder

Have you ever wondered how our life revolves around cylindrical water pipelines, cylindrical wires supplying electricity and cylindrical gas pipelines? From the cap of your toothpaste to a candle, from your tea cup to your writing pen/pencil, solid shapes especially cylinders form an unavoidable element of our daily lives. Our lives would not have been easier if these shapes would not have existed. Have you ever noticed that straws, water bottles, batteries, soda cans, coins, and other commonly used items in your daily life are all examples of cylinders?

A cylinder is a three-dimensional solid with two circular bases connected by a curving surface. The circular bases are parallel and of the same size and shape, indicating that they are congruent. A cylinder has two curved edges as well as three surfaces, one curved and two flat.

In this STEM pack, you will explore more and more cylinders around you, create crafts using cylinders and appreciate the properties that make their role very important in our daily life.



Main Activity: Let's Save the Penguins

Introduction

Cylinders are commonly seen and used in our daily life. Whenever we fold a chart to take it to our school, we are actually creating a cylinder, a long cylinder. **It's time to become creative and create cylindrical crafts.**

What Will You Need?

- Black rectangular sheet measuring 3 cm by 8 cm
- Black rectangular sheet measuring 5 cm by 15 cm
- Cutouts of 2 cute eyes (similar to medium sized googly eyes)
- One yellow a-4 size pastel sheet
- One white a-4 size thick sheet
- Fevicol
- Scissors

Let's get started! Let's learn how we can create [our little paper penguin](#) using 2 cylinders.

Do You Know?

Penguins are endangered birds. They are facing many threats from geological events like volcanic eruptions to pollution, getting tangled in fishing nets, climate change and severe weather. It's time to sensitize everyone to save this lovely creature from getting extinct.

What Will You Need?

Computer with an internet connection

Let's Get Started

- Find out more about penguins, their role in nature and what can we do to save them.
- Create an e-poster on Saving Penguins in [Venngage](#) and sensitize other people too by sharing it on your parents' social media pages like twitter.

Bonus Activities

Activity 1: Cylinders Crossword Puzzle

Introduction

Wordsearches boost your working memory, enhances problem-solving skills. They also improve your spellings and enhances language skills.

This wordsearch game tests your knowledge about different examples of cylinders around you.

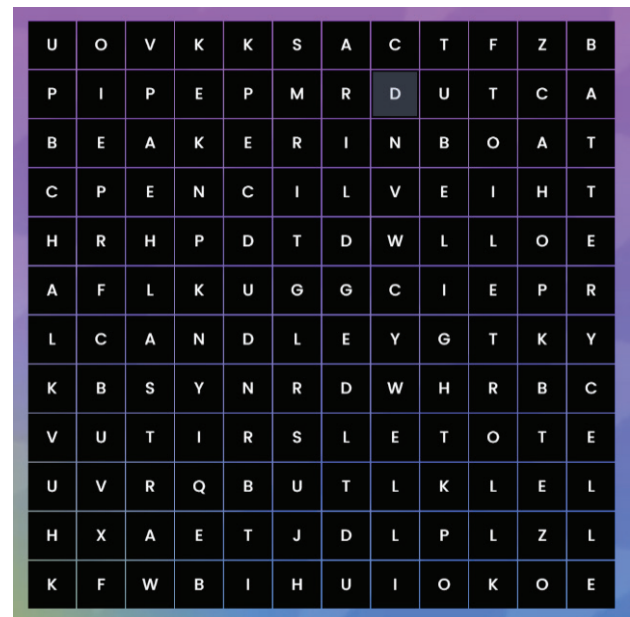
What Is A Wordsearch?

A wordsearch is a puzzle invented by **Norman E. Gibat** in 1968, that involves searching for words in a grid of letters. This puzzle consists of letters arranged in a grid, containing several hidden words written in any direction.

The main objective of the game is to consult with a list of words/hints supplied with the grid, and find all the words on that list.

Put on your thinking caps and [let's get started](#).

You can explore about the [net of a cylinder](#) and create a one on your own too.



Challenge Activity: Make a Flute

Music is everywhere. We all love to hear music. Some of you must be proficient in playing one musical instrument or another. Do you know you can create your own flute type of instrument using cylinders i.e. drinking straws? Yes, that's true!

Let's get started. [Click here](#) to learn more about this activity.

What Will You Learn?

- Same instrument can make sound of different pitches by changing how vibrations are made.
- Understand how sounds are made and associate them with something vibrating
- The science behind it:
 - ▶ A straw flute makes a sound when you blow over the holes.
 - ▶ Longer straws create a different pitch sound to shorter straws because the time taken for the vibrations to travel up and down the straw is different.

Extended Activity:

Try using thicker or thinner straws, change the length of the straws or make a hole in the straws and record how the sound changes.