

# Learn at Home

## Grade 3 - Science

# Unit Overview

This series of online activities packet of resources is designed for students and their parents who wish to support in-school learning with activities that can be done independently and/or with a partner at home. The packet includes four activities that support the major scientific work of the 3rd Grade with a particular focus on science content. These activities should each take 30-40 minutes (although some can be extended) and may be completed in any order.

## How to use this guide

For each activity, you will find:

- information about both content and practice that the activity supports
- a description and/or instructions for the activity
- one or more focus or discussion questions that will help deepen the learning of the activity

# Day 1 Science

## Activity: 1: Measurement - Meters

### Task

Complete the online course on measurement - meters. Measure and compare lengths while taking a trip on the school bus!

At the end of the activity, you should be able to:

- Use abbreviations for meter and centimeter
- Use centimeters to measure and compare lengths
- Use meters to measure and compare lengths
- Recognize when a smaller unit than a meter is needed
- Guess length by referring to a familiar length

Link: Click on <https://en.e-learningforkids.org/math/lesson/english-bus-measurement-meters/>

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ Measurement- The act or process of measuring something
- ☐ Meter- A metric unit used to measure length.
- ☐ Centimeter – A metric unit that is used to measure length.
- ☐ Unit - A particular amount of length, time, money, etc., that is used as a standard for counting or measuring
- ☐ Length – The longest dimension of an object.
- ☐ Estimate - A close guess of the actual value, usually with some thought or calculation involved.

**Click on Exercise 1 – Match centimeters and meters**

**Click on Exercise 2 – Visualizing lengths**

**Click on Exercise 3 – Measure and Compare Lengths**

**Click on Exercise 4 – Meters and Centimeters**

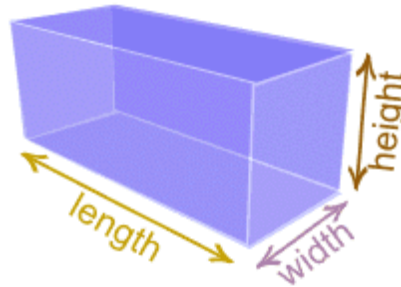
**Click on Exercise 5 – Estimate Length**

# Day 2 Science

## Activity: Measuring the length, width, and height of everyday items

### Tools and Materials

- Metric ruler
- Metric tape measure
- Items in chart below



### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Length** – Longer distance across
- ☐ **Width** – Smaller distance across
- ☐ **Height** – Vertical distance

**Using a ruler:** Make sure one end of the object is at the “0” mark and read the number at the opposite end.

**Using a tape measure:** A tape measure has a little right-angle “hook” at the start. You may use this to hold on to one edge while you pull the tape measure to the other edge. Make sure you measure straight across (or straight up and down).

Measure the following items.

| Name of Item        | Estimate of Item (cm) | Actual Length of Item (cm) |
|---------------------|-----------------------|----------------------------|
| Paperclip (width)   |                       |                            |
| Teaspoon (length)   |                       |                            |
| Fork (length)       |                       |                            |
| Pencil (length)     |                       |                            |
| Chair seat (height) |                       |                            |
| Table (width)       |                       |                            |
| Table (length)      |                       |                            |
| Table (height)      |                       |                            |
| Door (width)        |                       |                            |
| Bed (width)         |                       |                            |
| Shoes (width)       |                       |                            |

# Day 3 Science

## Activity: Science – Mass & Volume Matter

### Task

Complete the online course on Science – Iceland - Mass & Volume Matter. Sig, the Captain of a fishing boat, knows all about matter. But he needs some help measuring the mass and volume of objects. Will you help him?

At the end of the activity, you should be able to:

- Understand the basic concepts of matter
- Distinguish between matter versus non-matter objects
- Measure volume of objects in liters
- Measure the mass of objects

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Matter** – Everything in the universe that has mass and takes up space.
- ☐ **Mass** – A measure of how much matter there is in an object.
- ☐ **Liters** – A metric unit for measuring the volume of a liquid or gas.
- ☐ **Liquid** – Matter that has a definite volume but no definite shape.
- ☐ **Volume** – The amount of space that matter takes up.

Link: Click on <https://en.e-learningforkids.org/science/lesson/iceland-mass-volume-matter/>

**Click on Exercise 1 – Basic concepts of matter**

**Click on Exercise 2 – Can the fish be sold at the market?**

**Click on Exercise 3 – How many liters is it?**

**Click on Exercise 4 – Matter versus non-matter?**

# Day 4 Science

## Activity: Measure the Volume of a Liquid

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Liquid** – Matter that has a definite volume but no definite shape.
- ☐ **Volume** – The amount of space that matter takes up.
- ☐ **Measure** – An amount or degree of something
- ☐ **Measuring Cup** – A tool to measures volume
- ☐ **Milliliter** – a unit of volume

### Tools and Materials

- Measuring cup
- Container of water
- 4 different sized cups

### Procedure

1. Pick one cup at a time
2. Estimate how many milliliters (ml) of water the cup will hold
3. Record your estimate in the chart below
4. Carefully fill the cup with water until it reaches the top
5. Record the actual amount of water the container can hold
6. Carefully pour the water back into the container
7. Repeat steps 2-6 with the remaining three cups

| Cups of Different Sizes | Estimate Volume of the Cup | Measure Volume of the Cup |
|-------------------------|----------------------------|---------------------------|
| Cup One                 |                            |                           |
| Cup Two                 |                            |                           |
| Cup Three               |                            |                           |
| Cup Four                |                            |                           |

Were your estimates close to the measured volume that each cup could hold?

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When do you use volume in your everyday life?

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Record the name of the tool used.

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# Day 5 Science

## Activity: Measurement, Temperature & Time

### Task

Complete the online course on Market Place – Measurement; Temperature & Time. Join Ashanti in the market to learn all about temperature!

At the end of the activity, you should be able to:

- Link temperature to everyday happenings
- Read informational scales on a thermometer
- Compare temperatures
- Identify the temperature at the boiling point and freezing point

Link: Click on <https://en.e-learningforkids.org/math/lesson/market-place-measurement-temperature-time/>

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Measure** – An amount or degree of something
- ☐ **Thermometer** – A tool to measure temperature. Temperature can be measured in units called degrees Fahrenheit and degree Celsius.

**Click on Exercise 1 – Comparing Temperatures**

**Click on Exercise 2 – Determining Temperature Types**

**Click on Exercise 3 – Using a Thermometer**

**Click on Exercise 4 – Choosing what to wear**



# Day 6 Science

## Activity: Measurement Temperature

### Tools and Materials

- Thermometer
- Container of water
- Container of ice
- Empty cup and container of warm water
- Measuring cup

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Measure** – An amount or degree of something
- ☐ **Thermometer** – A tool to measure temperature. Temperature can be measured in units called degrees Fahrenheit and degree Celsius.

Measure the following in degrees Celsius.

| Items/Procedure   | Estimate Temperature (°C) | Actual Temperature (°C) |
|---|---------------------------|-------------------------|
| Fill the cup with 50 mL of room temperature water. Take the temperature in degrees Celsius. |                           |                         |
| Add an ice cube in the cup of water. Stir gently for two minutes and take the temperature.  |                           |                         |
| Fill the cup with 50 mL of warm water. Take the temperature in degrees Celsius.             |                           |                         |
| What is the room temperature in degrees Celsius?  |                           |                         |

What did you observe about the water's temperature?

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Record the name of the tool(s) used.

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**Color each thermometer to show the correct temperature.**

30 Degrees Celsius (°C)



40 Degrees Celsius (°C)



60 Degrees Celsius (°C)



80 Degrees Celsius (°C)



# Day 7 Science

## Activity: Measuring Mass

### Task

Complete the online course on Castle in the clouds – Measurement – Mass. Visit the castle in the clouds to learn all about kilograms and the mass of objects.

At the end of the activity, you should be able to:

- Identify the need for formal unit to measure mass
- Use hefting to find objects that are more than, less than, and the same as a kilogram
- Measure mass by using the kilogram as a unit
- Estimate the mass of an object by comparing to a known mass
- Write the mass of an object by using kilogram abbreviation (kg)
- Put in order the mass of several objects from lightest to heaviest

Link: Click on <https://en.e-learningforkids.org/math/lesson/castle-in-the-clouds-measurement-mass/>

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Measure** – An amount or degree of something
- ☐ **Mass** – A measure of how much matter there is in an object.

**Click on Exercise 1 – Quest of the Kilogram**

**Click on Exercise 2 – Quest of Shields**

**Click on Exercise 3 – Quest of Broken Path**

**Click on Exercise 4 – Hefting Objects**

# Day 8 Science

## Activity: Measuring Mass

### Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- ☐ **Measure** – An amount or degree of something
- ☐ **Mass** - A measure of how much matter there is in an object.
- ☐ **Balance** - To arrange so that one set of elements exactly equals another.

### Tools and Materials

- Pan balance
- Gram cubes and pieces
- Find 5 objects to be massed

### Procedure

1. Pick up one of the objects.
  2. Estimate the object's mass in grams.
  3. Record your estimate.
- a. Using the balance or scale, measure the mass of the object and record the actual measurement. Repeat for the remaining objects.

| Name of Object | Estimated Mass of Object (g) | Mass of Object (g) |
|----------------|------------------------------|--------------------|
|                |                              |                    |
|                |                              |                    |
|                |                              |                    |
|                |                              |                    |
|                |                              |                    |

- b. Were your estimates close to the measured mass of each item?

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- c. Put the objects in order using the actual mass and record your answers.

1. 

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2. 

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3. 

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4. 

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5. 

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d. Why is it important to have good (accurate) measurements?

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e. Record the name of the tool(s) used.

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f. Complete the chart below by identifying the scientific tool used to measure each of the physical properties listed. The scientific tool in the first row is shown.

| Property           | Scientific Tool |
|--------------------|-----------------|
| Mass               | Pan Balance     |
| Volume of a liquid |                 |
| Temperature        |                 |
| Length             |                 |

# Day 9

## Vocabulary

Learn the new vocabulary words below. You will use these vocabulary words in today's activity.

- **capture (verb):** to catch
- **dangerous (adjective):** not safe
- **renewable (adjective):** can never be used up
- **technician (noun):** a worker trained to do a special job
- **turbine (noun):** a machine with fan-like blades that turn

## *Workers Wanted*

Read the article below and answer the questions that follow.

Printed by: Aron Persaud  
Workers Wanted  
Charlie Riedel/AP Photo



LINCOLN, Kansas (Achieve3000, February 19, 2008). Wind farms are going up across the country. These farms use wind to make power. This is a cheap way to make electricity. Also, wind power is renewable. And, wind farms don't make the planet dirty.

Wind power is made at wind farms. The farms are made of rows of wind turbines. The turbines look like simple windmills. They turn in the breeze. The turbines capture the wind. They turn it into electricity.

Last year, workers put up almost 3,200 turbines on wind farms. These extra turbines allowed wind farms to make nearly twice as much wind energy. That's enough electricity to power 1.5 million homes for a year.

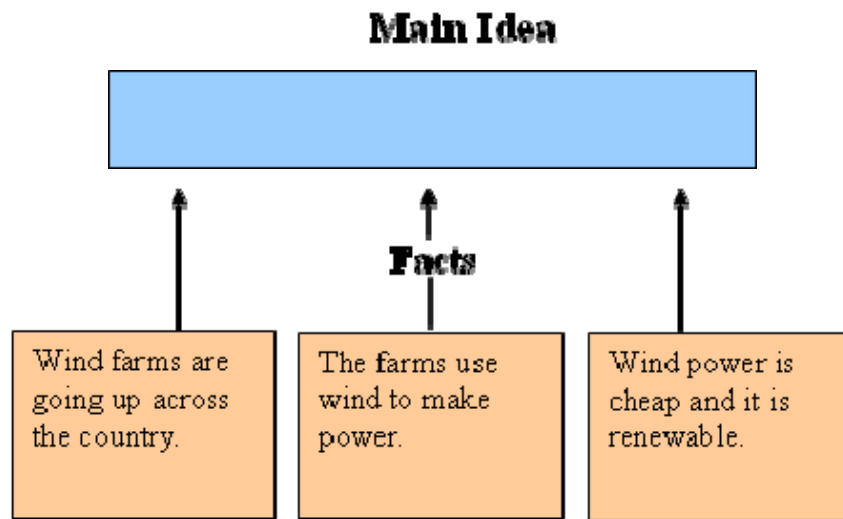
Not everyone likes wind farms. Some people say that the huge turbines are ugly. Also, the giant rotors, or blades, on the turbines could be dangerous. They could harm birds and other wildlife.

There's another problem with wind power. There aren't enough workers. People who build wind farms are highly trained. These technicians need to know about machines, computers, and weather. They also must climb 200 feet in the air. And, they have to do it in all kinds of weather. It isn't easy to find workers who can do all

these things. Wind companies are hurrying to train more technicians.

Many people think wind power is here to stay. It is expected to

continue growing. Information for this story came from AP.



1. Think about the news story. Which fits best in the empty box above?
  - A. More wind farms are being built, and they need more workers.
  - B. Wind farm technicians must be able to climb 200 feet in the air.
  - C. About 3,200 turbines can power 1.5 million homes for a year.
  - D. Wind farm technicians need to know about machines and weather.
  
2. Think about the news story. Some people say that wind farms are dangerous. Why?
  - A. Wind farms make the air dirty.
  - B. Wind farm turbines could make too much power.
  - C. Wind farms have too many workers.
  - D. Wind farm turbines could harm birds and other wildlife.
  
3. Let's say you are writing a summary of the news story. Which is most important to put in the summary?
  - A. Wind farm turbines look like simple windmills.
  - B. Some people say that wind farm turbines are ugly.
  - C. Technicians sometimes climb 200 feet in the air.
  - D. Wind farms are being built and they need more workers.

4. Which two words from the news story have almost the same meaning?
  - A. Workers and technicians
  - B. Electricity and farms
  - C. Machines and companies
  - D. Problem and weather
  
5. The reader can tell from the news story that\_\_.
  - A. Most wind farms were built hundreds of years ago.
  - B. Working on a wind farm is not an easy job.
  - C. All wind farms are built near many tall trees.
  - D. Turning turbines takes very little wind.
  
6. The author probably wrote this news story to\_\_\_.
  - A. Tell readers about the different ways that electricity can be made
  - B. Show readers that wind power is the cheapest energy
  - C. Tell readers about wind farms and their need for workers
  - D. Show readers that wind power is the best energy
  
7. The news story says: “The turbines capture the wind.” To capture is to\_\_.
  - A. Pollute
  - B. Scatter
  - C. Model
  - D. Catch
  
8. Which question is not answered by the news story?
  - A. How many wind farms are there in the U.S.?
  - B. Why are more wind power workers needed?
  - C. How high must wind farm workers climb?
  - D. Why are some people against wind farms?
  
9. Think about wind being used to make electricity. What are some good things about this? What are some bad things about this? Use facts from the news story to back up your answer. You can use ideas of your own, too. Write your answer below.



# Day 10

Task: Endangered Species Game. Play the game with family members to find out how a law protects animals and plants.



## Endangered!

An animal or plant that goes extinct is gone forever. Endangered animals or plants are species that are in danger of going extinct because there are so few of them. In the United States, these animals and plants are protected by a law called "The Endangered Species Act." Play the Endangered Species Game to find out how this law works.



## What You'll Need

- game board Click on <https://www.amnh.org/explore/ology/biodiversity/endangered-species-game2> then click on "pdf print-out"
- scissors
- tape
- pair of dice
- place markers

(You can use pieces of colored paper, small plastic animals, or place markers from other games. Make sure that everyone who plays has a different place marker.)

What to do

1. Trim along the dotted lines of the print-outs. Then, arrange the 4 pages so the pictures line up and tape them all together. (If you are not using clear tape, make sure you don't put the tape over any words or pictures).



2. Put your markers where it reads, "start." Decide who goes first. First person throws dice.



3. If you land on a space with a question, you have to answer the question correctly before you can move again. If you answer incorrectly, you lose a turn. The other players decide if you're right. (TIP: The answer can be found on the game board.)



4. You have to roll the exact number to get to the Survival circle, or else roll doubles once you're on or past the space that reads, "From here on in doubles will win!"



***This activity and images are provided courtesy of the American Museum of Natural History***