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### SCIENCE
(56-101)

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What these Icons stand for!

Shall we classify!

Activity / Let us do!

Let us collect!

Let us discuss!

Let us think!

Let us write.

Let us draw/colour.

Let us find!

Fact.
Teacher : Yesterday we went to a beautiful Park.
          How did you feel?

Students : Madam, yesterday’s trip was enjoyable and very useful.

Teacher : Mugila, you look tired today. What did you have for your breakfast?

Mugilan : I had chips and pizzas.

Vaigunth : Madam, he loves to eat pizza, burgers, noodles, chips, and murukku.

Teacher : Mugila, don’t you like fruits and vegetables?

Mugilan : Fruits! Vegetables! I don’t like them at all.

Teacher : Children! Are you all of same taste like Mugilan? Okay, now tell me what did you eat this morning?
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name</th>
<th>Breakfast</th>
<th>Ingredients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dheepak</td>
<td>Idly, Sambar</td>
<td>Rice, Blackgram</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
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<td>4.</td>
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<td>5.</td>
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</tr>
</tbody>
</table>

**Let us write:**

Most of us eat ________________________________.

Ingredients of the food ________________________________.

The food you like to eat ________________________________.

Items you can eat without cooking ________________________________.

Food we must take in our daily life

- Cereals
- Pulses
- Legumes
We get these food from plants and animals. They give us energy, help us to grow and protect us from various diseases.

Tabulate the food items you eat in the column given below

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Food from plant</th>
<th>Food from animal</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Rice, Wheat</td>
<td>Egg</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
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<tr>
<td>4.</td>
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<td>5.</td>
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<td></td>
</tr>
</tbody>
</table>
Do we eat food just for taste and hunger? Food contains different nutrients that help the body in different ways. Healthy food has...

- energy producers like carbohydrates, fats
- body builders like proteins
- body regulators like minerals, vitamins and water

**Carbohydrates give energy instantly**

**Proteins help us to grow.**

- Tapioca
- Corn
- Ragi
- Potato
- Rice
- Wheat
- Lentil
- Green Gram
- Chick pea
- Fish
- Black gram
Fats give energy and strength

Curd  Butter  Ghee  Oil

Vitamins and minerals protect us from diseases

Carbohydrates, proteins, fats, vitamins and minerals are the nutrients present in our food. Water also plays a vital role. Are we eating healthy food? Will it improve our health?

Shall we collect!

Complete the table below with food you have eaten for a week.

Name of the Student: ____________

<table>
<thead>
<tr>
<th>Days</th>
<th>Breakfast</th>
<th>Lunch</th>
<th>Dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuesday</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Wednesday</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Thursday</td>
<td></td>
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<td></td>
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<tr>
<td>Friday</td>
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<td></td>
<td></td>
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<tr>
<td>Saturday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Shall we classify?

Tick the nutrients present in the following food items.

<table>
<thead>
<tr>
<th>Food Item</th>
<th>Carbohydrates</th>
<th>Proteins</th>
<th>Fats</th>
<th>Vitamins</th>
<th>Minerals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

Let us discuss!

- Discuss about various nutrients present in your food based on the tabulation done above.
Facts

- Don’t overcook the vegetables. They lose the nutrients.
- Vitamins and minerals are lost when we fry our food.

Balanced diet

The food taken by an individual should contain correct proportion of nutrients according to his age and work. A balanced diet is a diet that contains adequate amounts of carbohydrates, proteins, fats, vitamins and minerals.

Which is the balanced diet?

Food pyramid

1. Cereals and Sprouted Pulses
2. Fruits
3. Meat, Fish and proteins
4. Milk, Oil, Fats and Sweets

Which is the balanced diet?
The bottom part of the pyramid contains food that you should take more in quantity. The two middle parts of the pyramid contains food that you should take moderately. The top part of the pyramid contains food that you should take less quantity.

Let us classify!

Classify the food items you had based on the nutrients in the pyramid.

Facts
- Rice loses its nutrients when we polish it.
- Milk consists of carbohydrates, proteins, fats, vitamins and minerals.

Let us think!

Is the food you had yesterday, a balanced diet?

Food items to be avoided:
Burger, pizza, chocolate, tin and canned foods, soft drinks are not good for our health.
**Food items to be included:**
Milk, curd, carbohydrates, pulses, fruits, vegetables, greens, egg and fish. These strengthen our body.

**Activity:**
1. Prepare an album with pictures of sprouted cereals and pulses.
2. Sprout green gram, millet and chick pea (chenna) at home. Eat and enjoy it.

**Different places ............. Different diet**

<table>
<thead>
<tr>
<th>Tamilnadu</th>
<th>Kerala</th>
<th>Tribes</th>
<th>North Indians</th>
<th>China</th>
</tr>
</thead>
<tbody>
<tr>
<td>We like rice, vegetables, greens, payasam etc.</td>
<td>We like appam, puttu, coconut, fish, bengal gram etc.</td>
<td>We like honey, fruits, tubers etc.</td>
<td>We like chappati, pulav, biriyani, sabji etc.</td>
<td>We like noodles, soup, sea food etc.</td>
</tr>
</tbody>
</table>
To protect our Health...

- An adult should drink 2.5 litres of water daily.
- Wash fruits and vegetables thoroughly before eating them raw.
- The seasonal fruits and vegetables like gooseberry, carrot, lady's finger, cucumber, guava, papaya and watermelon protect our health.
- The skin of fruits and vegetables are rich in nutrients.

The method of preserving milk called pasteurization was discovered by him.

Evaluation:

a. Let us match

1. Butter

2. Proteins

3. Carbohydrates

4. Fats

Who is he?

Louis Pasteur
b. Let us connect using lines:

1. Carbohydrates  obesity
2. Proteins  immunity
3. Fats  growth
4. Vitamins  energy

c. List the names of the greens found in your area.


d. Activity

Divide the students into five groups. With the help of teacher prepare and present a puppet show on the importance of vegetables, fruits, greens, cereals and pulses.

e. Let us write.

1. Sugar is a  (protein / carbohydrate)
2. Can be eaten raw  (potato / cucumber)
3. Rich in protein  (pulses / vegetables)
4. Rich in vitamins  (greens / curd)
5. Instant strength  (carbohydrate/fat)
f. Let us find out!

1. I am orange in colour you can eat me without cooking.
2. I am pale in colour and mostly served as chips.
3. I am green in colour you can eat me without cooking.
4. I am red in colour I add taste to food.

(Tomato, Carrot, Potato, Lady's finger, Beans)

g. Shall we classify!

Classify the nutrients:

<table>
<thead>
<tr>
<th>Carbohydrates</th>
<th>Proteins</th>
<th>Fats</th>
<th>Minerals</th>
<th>Vitamins</th>
</tr>
</thead>
<tbody>
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<td></td>
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</tbody>
</table>
h. Riddle part!

I am yellow in colour. I am used as medicine to cure cuts and wounds. I am one of the most important ingredients in daily food due to my antiseptic property. Think and tell me who I am.

i. Let us think!

- What can be done to get the nutrients fully from the legumes and pulses?

j. Let us mix and taste

We can eat raw...

Carrot, tomato, cucumber, beetroot, sprouted pulses, lemon, curry leaves, salt, pepper.

Ask each student to bring one vegetable, wash them, cut them into pieces. (with the help of an adult) Mix them with salt and pepper in a bowl. Let us eat. How is it?
The children were returning home from school. They saw workers using a crowbar to remove a huge rock lying on the road. They wondered how it would be possible to move such a huge rock with a small iron rod. One end of the crowbar was inserted under the rock. A small stone was kept under the crowbar. When the other end of the crowbar was pressed down, the rock moved! The children were thrilled.

- A push or pull which stops or moves an object is called force.
- An object which helps us to do work easily is called a machine. (e.g.) lever.
- Lever helps to transfer the force applied at one end to the other end. It also changes the direction of force.
The point where the crowbar touches the small stone is called the fulcrum.
The object which is moved is called the load.
The force given at one end is called the effort.

Based on the position of fulcrum, levers can be classified into three types.

**First order lever**
(e.g. Scissors)
Force applied at handle - Effort
Cloth which is cut - Load
Centre point - Fulcrum

**Second order lever**
(e.g. Lemon squeezer)
Handle - Effort
Lemon (Centre) - Load
Opposite end - Fulcrum

**Third order lever**
(e.g.) “Appala iddukkki”
Effort - 
Load - 
Fulcrum - 
Some simple machines also help us to do the work easily.

Inclined plane  Screw jack  Wedge

Picture – 1  Picture – 2

In the first picture, a pulley is used to draw water from the well. In the second picture water is drawn without the use of pulley. Which is easy method? Why?

Can you write some other uses of pulley?
Shall we classify?

Classify the order of the lever

Just write - First order-1, Second order-2, Third order-3
Let us find out!

Write the name of the tools and machines given below:

________________________
________________________
________________________

________________________
________________________
________________________

________________________
________________________
________________________

________________________
________________________
________________________

Scissors, Spade, Wedge, Sickle, Axe, Needle, Hammer, Screw Driver, Spanner, Saw, Nail.
Shall we classify!
Look at the picture and answer the following:

1. What is the work they are all involved in?
2. Tabulate the tools used by them.

<table>
<thead>
<tr>
<th>Worker</th>
<th>Work</th>
<th>Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

(The teacher may take the students to a construction site and explain.)

Who is he?

He defined the principle of levers

Archimedes
Evaluation:

a. Let us find!

Name the simple tools hidden below:

b. Let us think!

Can you write the uses of following tools?

<table>
<thead>
<tr>
<th>Name of the tool</th>
<th>Uses</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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</tr>
</tbody>
</table>
c. Let us write:

Write down the names of other tools you know.

________________________________________

________________________________________

________________________________________

________________________________________

d. Let us find!

This is a ___________ type of lever

Load ___________________________

Fulcrum _________________________

Effort ___________________________

Name of the tool ___________________

Used in _________________________

e. Double matching

<table>
<thead>
<tr>
<th>Tools</th>
<th>Uses</th>
<th>Used in</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Tongs</td>
<td>harvest</td>
<td>garden</td>
</tr>
<tr>
<td>2. Hoe</td>
<td>to draw water</td>
<td>textile shop</td>
</tr>
<tr>
<td>3. Scissors</td>
<td>to hold hot vessels</td>
<td>well</td>
</tr>
<tr>
<td>4. Pulley</td>
<td>to cut clothes</td>
<td>field</td>
</tr>
<tr>
<td>5. Sickle</td>
<td>to remove weeds</td>
<td>kitchen</td>
</tr>
</tbody>
</table>
f. Draw or paste a picture of simple machine used in your daily life.
There was a tug-of-war in our school today. The third standard students were so excited. The Physical Education Teacher divided them into two groups. Xavier led one team and Barath led the other team. The Teacher blew the whistle. Both teams pulled the rope with their full strength. Xavier’s team won the event. The teacher congratulated the team and said that they won the event because of regular practice.

Thanking the teacher Xavier said, “We won the match not only because of regular practice but also because of our healthy food habits. We drink milk every day. We also eat eggs, fish, meat and vegetables along with rice and wheat”.
These food items give us energy to play, work and stay active throughout the day.

We eat very little chocolates, ice creams and sweets. We do not eat food sold open on the streets.
Activity

Based on the given example, try to complete the preparation of remaining food items.

Banana Milk Shake

Papaya jam

Lemon Juice

Fruit salad

Crush the pulp of banana

Add milk and sugar

Stir it
We never say no to fruits, vegetables and sprouted cereals and pulses. They help us to prevent diseases.
Let us find!
Which is right / Wrong.. Why?

- We do exercise daily in the morning and evening.
- We play outdoor games at least for an hour a day.
- We practise yoga and meditation daily.
Shall we classify!

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Team Games</th>
<th>Individual Games</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
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<td>3.</td>
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<tr>
<td>4.</td>
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<td>5.</td>
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</tr>
</tbody>
</table>
We watch Television for half an hour after completing our studies. We finish our dinner by 8 p.m. and go to bed by 9 p.m.

Our body needs rest. After having a wholesome food and being active during the day, we sleep peacefully. Next day we get up early in the morning for exercise and studies.
After listening to Xavier, Barath’s team said, “We watch TV for long hours, we eat fried foods very often. We take a lot of chocolates and ice creams. We don’t drink milk much. We drink aerated cool drinks. All this reduced our strength. We will change all these habits, we will follow healthy habits and win the event next time”.

Activity

Let us do!

Eye exercise

(with parent or teacher guidance)

◆ Join both the hands, keep the thumbs touching each other as shown in the picture.
◆ Bring them slightly below your eye level. The eye should move along with the finger.
- Take hands to your sides as shown in the picture.
- Eye should always be fixed on the thumb nails.
- During the exercise head can move slightly.

Eye protection

- Wash your eyes with clean water every morning.
- Do not look directly at the sun.
- Do not read in dim light.
- Do not lie down while reading.
- Do not read while travelling in a bus or train.
- When dust gets into the eyes, do not rub your eyes with hands. Wash them with clean water.
- Eating lot of greens, orange and yellow fruits and vegetables are good for your eyes.
- Sit at least 2.5 meters away from TV while watching it.
- Watch TV with sufficient lighting.

Who is he?

The Father of Yoga

Pathanjali Munivar

Donate blood until death!
Donate eyes after death!
Evaluation:
a. Let us find!

Which is correct ✓?  Which is wrong ✗?
b. Let us discuss!

Mark the answer and discuss with your teacher.

1. I am always active. 
   Yes ☐  No ☐

2. I cover my face and sleep.
   Yes ☐  No ☐

3. I get tired after playing.
   Yes ☐  No ☐

4. I am always healthy.
   Yes ☐  No ☐

5. I go to bed late in the night.
   Yes ☐  No ☐

6. I get up early in the morning.
   Yes ☐  No ☐

7. I always keep eating.
   Yes ☐  No ☐

8. I play in the evening.
   Yes ☐  No ☐

9. I eat a fruit daily.
   Yes ☐  No ☐

10. I do not eat vegetables.
    Yes ☐  No ☐

---

c. Make clay models of fruits and vegetables with suitable colours.
d. Let us find!

Tick the right ✓ one and cross the wrong ✗ one.

1. We should wash our hands before eating.  
2. We should eat our food very fast.  
3. We should eat only at proper time.  
4. We should eat lots of ice-creams and toffees.  
5. We should use clean vessels for cooking.  
6. We should eat food sold on the streets.  
7. We should always keep the food closed.  
8. We should drink boiled and filtered water.  
9. We should not eat fruits.  
10. We should eat greens along with our food everyday.
Teacher : Children, do you all know what we celebrate on November 14?

Velankanni : Yes. November 14 is Childrens’ day.

Teacher : You are right. What day is today?

Students : February 28.

Teacher : Good. Today is the National Science Day. Let us do some simple science experiments to celebrate it.

Students : Yes, Madam.
All things around us are matter. Matter exists in solid, liquid and gaseous states.

Teacher: Keep the things you have on the table.
(The following things are kept on the table.)

<table>
<thead>
<tr>
<th>Air filled balloon</th>
<th>Air filled foot ball</th>
<th>Empty foot ball</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vendors balance</td>
<td>Note books</td>
<td>Water bottles</td>
</tr>
<tr>
<td>plates</td>
<td>Pencils</td>
<td>Eraser</td>
</tr>
<tr>
<td>Book</td>
<td>Empty balloons</td>
<td>Water tumblers</td>
</tr>
</tbody>
</table>
Teacher: Shall we start doing our experiments right away?

Students: Yes, Madam.

Teacher: Now take your books and pencils. They all have proper shapes. They do not change their shapes. We call these things as solids. Hold the notebook in one hand and pencil in the other. How do you feel?

Students: The pencil is light, whereas the book is heavy.

Teacher: What else do you observe?

Students: They have different shapes.

Teacher: Do they flow like water?

Students: No, they do not flow.

Teacher: These are the properties of solids.

- Solids do not flow.
- Solids have weight.
- Solids have definite shape.
- Solids occupy space.
Teacher: Let us take a bottle of water. Pour water out. (A student pours a little amount of water on the floor). What do you see?

Students: Water flows on the floor.

Teacher: Water is a liquid. It can flow from one place to another. Let us pour the same amount of water on to a plate and into a tumbler. We see that water takes the shape of the container.

Teacher: I am going to place an empty water bottle on one pan and a water filled bottle on the other pan of the balance. What happens?

Students: The pan with the filled water bottle comes down and the one with the empty bottle goes up. This shows that water has weight.
Teacher: Let us blow a balloon and release it from our hand. See what happens?

Students: The balloon falls down as air comes out.

Teacher: Could you see the air? Can you hold air as you can hold the solids and liquids?

Students: No.

Teacher: Let us keep an air filled football on one pan and an empty football on the other pan in the balance. What happens?

Students: The pan with the air filled football comes down and the one with the empty football goes up. So we come to know that air has weight.
Teacher: We celebrated The National Science Day by doing simple experiments to understand the states of matter. Thank you for your participation.

Activity:

Find and circle the odd one
1. Fruit juice, Murukku, Chocolate, Idly.
3. Door, Table, Air, Chair.

Who is he?

The Indian who received the Nobel Prize in Physics for the discovery of the Raman effect. The day on which he made this discovery is celebrated as national science day.

Evaluation:

a. Let us find!

1. Liquids used for cooking _______________________
2. Solids used for cooking _______________________
3. Liquids used for washing your hair ______________
4. What is filled in your cycle tube? _______________
b. Let us colour

Colour the flowers which have solid objects with red, liquids with violet and gas filled objects with yellow.
c. Compare:

Use ✔️ or ❌ according to the properties

<table>
<thead>
<tr>
<th>Matter</th>
<th>Shape</th>
<th>Weight</th>
<th>Flows</th>
<th>Occupies Space</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liquid</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

d. Let us do

Observe the picture and write the result.
A. Write the names of things you use in your daily life. Write the state of matter of those things.

__________________________  ________________________
__________________________  ________________________
__________________________  ________________________
__________________________  ________________________
__________________________  ________________________

B. List the solid and liquid substances in the food you eat.

__________________________  ________________________
__________________________  ________________________
__________________________  ________________________
__________________________  ________________________
__________________________  ________________________
'I can, I did'
Student's Activity Record

Subject:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Date</th>
<th>Lesson No.</th>
<th>Topic of the Lesson</th>
<th>Activities</th>
<th>Remarks</th>
</tr>
</thead>
</table>
