6th Grade Science
Midterm Review Packet

Directions: Please complete the following work as review for your science midterm. Some of the review will be done in class and some portions will have to be completed for homework.

Remember: Your science midterm is on ___________________ from ____________

Science Skills
1) What is an observation?
   An observation is using your 5 senses to describe something (touch, smell, taste, see, hear)

2) What is an inference?
   An inference is an educated guess based on your observations.

Directions: Please complete the chart below for this picture.

<table>
<thead>
<tr>
<th>Observations</th>
<th>Inferences</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a truck</td>
<td>1. The truck just crashed into something</td>
</tr>
<tr>
<td>2. There is a sign</td>
<td>2. The car/truck is trying to clean up the mess in the road with the plow.</td>
</tr>
<tr>
<td>3. There is a mess in the road</td>
<td></td>
</tr>
</tbody>
</table>
Measurement, Mass, Volume & Density

1) The three base units used for measurement in the Metric System are:

- **meters** (length, distance)
- **liters** (liquid volume)
- **grams** (mass)

2) Use the chart below to define the term and describe how to calculate it.

<table>
<thead>
<tr>
<th>Definition</th>
<th>How do you find it?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mass</strong></td>
<td>The amount of matter (stuff) in an object</td>
</tr>
<tr>
<td></td>
<td>• Place object on triple beam balance</td>
</tr>
<tr>
<td></td>
<td>• Move the riders until it is balanced</td>
</tr>
<tr>
<td></td>
<td>• Add up the amount on the 3 riders</td>
</tr>
</tbody>
</table>

| **Volume** | The amount of space an object takes up. |

*See below for:*
- Volume of a Regular Solid
- Volume of an Irregular Solid

<table>
<thead>
<tr>
<th><strong>Volume of a Regular Solid</strong></th>
<th>Definition of Regular Solid:</th>
</tr>
</thead>
<tbody>
<tr>
<td>An object that has flat surfaces and edges.</td>
<td>1.) ( V = l \times w \times h )</td>
</tr>
<tr>
<td><em>Can be measured with a ruler</em> ex. cube</td>
<td>2.) ( V = _____ cm \times _____ cm \times _____ cm )</td>
</tr>
<tr>
<td></td>
<td>3.) ( V = _____ cm^3 )</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Volume of an Irregular Solid</strong></th>
<th>Definition of Irregular Solid:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irregular objects don't have a regular shape <em>Cannot use a ruler</em> ex. marble</td>
<td>1.) Put water in graduated cylinder + record volume</td>
</tr>
<tr>
<td></td>
<td>2.) Drop object in water</td>
</tr>
<tr>
<td></td>
<td>3.) Record new volume of water</td>
</tr>
<tr>
<td></td>
<td>4.) Subtract ((#3 - #1))</td>
</tr>
<tr>
<td></td>
<td>5.) Add units</td>
</tr>
</tbody>
</table>

Water displacement
<table>
<thead>
<tr>
<th>Density of a Regular Solid</th>
<th>Density of an Irregular Solid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mass (Triple Beam Balance)</td>
<td>Mass (Triple Beam Balance)</td>
</tr>
<tr>
<td>Volume - 1 ( \times ) ( w \times h )</td>
<td>Volume - water displacement</td>
</tr>
<tr>
<td>( D = \frac{M}{V} )</td>
<td>( D = \frac{M}{V} )</td>
</tr>
<tr>
<td>( D = _ _ _ _ _ _ cm )</td>
<td>( D = _ _ _ _ _ _ g/mL )</td>
</tr>
<tr>
<td>( D = _ _ _ _ _ _ g/cm^3 )</td>
<td>( = _ _ _ _ _ _ g/cm^3 )</td>
</tr>
</tbody>
</table>

For questions 3-5, be sure to show all of your work and label!

3) Find the volume of the block shown below.

\[ 1) \quad V = l \times w \times h \]
\[ 2) \quad V = 4\text{cm} \times 6\text{cm} \times 5\text{cm} \]
\[ 3) \quad V = 120\text{ cm}^3 \]

4) What is the volume of the cap eraser below?

Water level on a graduated cylinder = 50mL
Water + cap eraser level on grad. cyl. = 59mL

\[ \frac{59\text{ mL}}{-50\text{ mL}} = \frac{9\text{ mL}}{\text{graduated cylinder}} \]

\[ 1\text{ mL} = 1\text{ cm}^3 \]
5) The volume of a block = 50cm$^3$. The mass of the block = 25g. Find the \textit{density} of the block.

\[
D = \frac{M}{V} = \frac{25g}{50 \text{ cm}^3} = 0.5 \text{ g/cm}^3
\]

6) What is the density of water?

\[1.0 \text{ g/mL}\]

7) Would the block from question 5 sink or float in water? Why?

The block would float in water because the density of the block (0.5g/cm$^3$) is less than the density of water (1.0 g/mL).

**Scientific Method**

This section will cover your independent scientific method project, as well as the general information we covered about the scientific method before the project (the sheets you have in your binder).

The best way to study for this section would be to:

- Use your scientific method foldables to review terms
- Look over labs and activities we completed in class
- Read over any BrainPop questions that are starred
- Read through your rough draft packet about your project

Topics that may be addressed on the midterm from this section:

- Purpose
- Hypothesis
- Independent Variable
- Dependent Variable
- Controlled Variables
- Procedure
- Claim
- Evidence
- Interpretation