Luster is the way light reflects off a mineral. The two major divisions of luster are metallic and nonmetallic. A mineral that has a metallic luster looks like polished metal. Gold, aluminum, lead and copper all have metallic lusters. Minerals with metallic lusters that are not bright and shiny have dull metallic luster.

Mineral specimens often display different lusters as they weather. Mineral books sometimes list two different lusters for the same mineral. Generally, these terms are similar such as greasy and waxy. The more you look at the lusters of minerals the easier it will be for you to identify them. Begin by looking for obvious differences such as metallic and non-metallic lusters. Next, look for all the minerals you can find with vitreous (glassy) lusters. Continue studying individual lusters until you can easily tell the names of the lusters of minerals with freshly broken surfaces.
Minerals, which do not have a metallic luster, are grouped together as nonmetallic luster minerals. This is a very broad group and a number of different names are given to the lusters of these minerals.

Go to some rock and mineral exhibits and look for the various lusters of minerals that have not been polished. See if you can tell why quartz has a vitreous luster and talc a pearly luster. Also look for minerals with resinous, waxy or earthy lusters.

**Common terms used to describe the luster of minerals**
- Adamantine luster — Adamantine luster sparkles like a brilliant diamond.
- Dull — Minerals that have a non-reflective surface of any kind.
- Earthy — Earthy minerals look like dirt or dried mud.
- Fibrous — These minerals look like fibers bundled together
- Greasy — Greasy minerals look greasy or have a look of grease.
- Gumdrop — Minerals with a gumdrop luster look similar to hard candy that has been sucked on.
- Metallic — Metallic minerals look like metals
- Pearly — A pearly luster has an iridescent milky white luster similar to pearls.
- Pitchy — Minerals with a pitchy luster have the look of tar
- Resinous — Resinous minerals have the appearance of resins such as dried glue
- Silky — Minerals that have silky luster remind people of silk. The luster is similar to fibrous but the fibers are more compact.
- Submetallic — Submetallic minerals do not have a shiny metallic luster but instead reflect little light even though they are opaque.
- Vitreous — Vitreous minerals have a glassy luster similar to what you see when light reflects off window glass. This is the most common luster found in minerals.
- Waxy — Minerals with waxy lusters look similar to light shining off wax candles.

**Lesson Summary**
- Luster is the way light reflects off a mineral.
- A mineral that has a metallic luster looks like polished metal.
- Minerals, which do not have a metallic luster, are grouped together as nonmetallic luster minerals.
Luster

Quiz 4

Fill in the blanks using words from the Word Bank

1. A mineral that has a metallic luster looks like ________________ metal.

2. Adamantine luster sparkles like a brilliant ________________.

3. The two major divisions of ________________ are metallic and nonmetallic.

4. Minerals that have a ________________ luster look similar to what you see when light reflects off a glass window.

5. Mineral specimens often display different lusters as they ________________.

6. Vitreous luster is the most ________________ luster you will find.

7. Pearly luster has an iridescent ________________ white luster similar to pearls.

8. You can begin to ________________ lusters by looking for obvious differences such as metallic and non-metallic lusters.

9. Minerals, which do not have a ________________ luster, are grouped together as nonmetallic luster minerals.

10. Minerals with an ________________ luster are rough or porous and have a dull or earthy look.

Word Bank

<table>
<thead>
<tr>
<th>vitreous</th>
<th>diamond</th>
<th>metallic</th>
<th>weather</th>
<th>polished</th>
</tr>
</thead>
<tbody>
<tr>
<td>luster</td>
<td>earthy</td>
<td>common</td>
<td>identify</td>
<td>milky</td>
</tr>
</tbody>
</table>
Looking for Luster

Activity 4

Introduction
Vitreous luster is the most common luster you will find. It looks similar to light reflecting off a piece of broken glass. The minerals in your kit have both metallic and nonmetallic lusters. Vitreous, greasy, pearly, adamantine, dull and resinous are the lusters you need to look for as you study your rocks.

Materials
♦ Minerals in your kit
♦ Keychain microscope

Directions
1. Take out your mineral samples and study each one separately.
2. Look at them with your microscope.
3. Separate your minerals into two groups.
   a. Place your minerals with a metallic luster in one group.
   b. Place your minerals with a nonmetallic luster in a second group.
4. List all the minerals that have a metallic luster in the chart.
5. Next take your minerals with a nonmetallic luster out and separate them into groups.
   a. Place minerals with a vitreous (glassy) luster in one group.
   b. Place minerals that have a greasy luster in another.
   c. Continue sorting the minerals with nonmetallic lusters until you have them all placed in a group.
6. Complete the chart by listing the lusters of your minerals.

Recording your experiment
1. You need to record information about the experiment.
2. Place the title of the activity at the top of the page.
3. Put today's date beneath the title.
4. List the materials used in the experiment.
5. Write a short summary of your observations while conducting the experiment.
# Luster Chart

<table>
<thead>
<tr>
<th>Mineral</th>
<th>Luster</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnetite</td>
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</tr>
<tr>
<td>Apatite</td>
<td></td>
</tr>
<tr>
<td>Muscovite Mica</td>
<td></td>
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<td>Galena</td>
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<td>Calcite</td>
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<tr>
<td>Albite Feldspar</td>
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</tr>
<tr>
<td>Sulfur</td>
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<td>Hematite</td>
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<tr>
<td>Quartz</td>
<td></td>
</tr>
<tr>
<td>Pyrite</td>
<td></td>
</tr>
<tr>
<td>Biotite Mica</td>
<td></td>
</tr>
</tbody>
</table>

## Extensions
- Collect a variety of minerals with different lusters.
- Visit a museum that has a mineral collection and look at the luster of unpolished minerals.