Families of Instruments Notes and Facts

General Facts

1. Any object that vibrates makes a sound. Musical instruments are simple machines that vibrate very fast and make sounds.

2. An object that produces vibrations is called a sound source. Not all objects vibrate on their own. They need help to begin vibrating. When a second object is used to start the first object’s vibration, that second object is called a sound generator.

3. Musical instruments have both a sound source and a sound generator to make beautiful music.

4. These simple machines called musical instruments are made of different kinds of materials. They also come in many shapes and sizes.

5. The material used to construct an instrument and its shape affect the tone quality it produces: Loud, quiet, harsh, mellow, muted, or bright.

6. The size of the instrument affects the range of sound pitches it makes:
   a. The bigger the instrument, the lower the sound
   b. The smaller the instrument, the higher the sound

7. All instruments are grouped into families.

8. People in a family belong together because they share similar traits. Among other things, they may share the same bloodline, culture, or physical traits.

9. Musical instruments in a family belong together because they share similar traits, too. They may sound similar, have a similar shape, or may be constructed out of the same material to one another.

10. There are six (6) families of instruments:
   a. The Woodwind Family
   b. The Brass Family
   c. The Percussion Family
   d. The Keyboard Family, and
   e. The String Family
   f. The Voice Family
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The Woodwind Family

1. Woodwind instruments are made (or were once made) of wood or use a piece of wood to produce a sound. To play a woodwind instrument, the player blows air into the instrument.

2. The sound source in a woodwind instrument is the vibrating body of the instrument. The sound generator in a woodwind instrument is the vibrating air passing through the instrument. The reed or lip plate causes the air to begin to vibrate.

3. Woodwind instruments belong to two (2) groups:
   a. the flute group (the shape of a flute is a long and skinny tube)
   b. the reed group (a reed is a type of wood)

4. The most popular instruments in the flute group are the recorder, the flute, and the piccolo. Other instruments in the flute group are the panpipes, the fife, the ocarina, and the flageolet.

5. The sound generator for a flute group instrument is the shape of the opening where the air enters the instrument. It cuts the air stream and sets it in motion.

6. Reeds help certain woodwind instruments produce a sound. They vibrate as air passes by them. There are two (2) kinds of reeds:
   a. the single reed (a piece of wood, attached to a mouthpiece, that covers a whole)
   b. the double reed (two pieces of wood held together with string and inserted into the instrument)

7. Instruments in the reed group are broken up into two (2) smaller groups:
   a. the single reed instruments
   b. the double reed instruments

8. The single reed instruments are the clarinet and the saxophone. There are multiple versions of clarinets and saxophones that vary in shape and size.

9. The most popular double reed instruments are the oboe and the bassoon. Other double reed instruments are the English horn and the contrabassoon.
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The Brass Family

1. **Brass instruments** are **long metal tubes** that are folded or coiled up (like a snake) so they are easier to carry. To play a brass instrument, the player blows air into the instrument.

2. The **sound source** in a brass instrument is the **vibrating body of the instrument**. The **sound generator** in a brass instrument is the **vibrating air passing through the instrument**. The player’s lips cause the air to begin to vibrate.

3. Brass instruments have no parts that help the player’s air stream to vibrate. Brass players “buzz” their lips to blow vibrating air into the instrument.

4. The Brass family instruments, arranged from smallest to largest, are the **trumpet**, the **French horn**, the **trombone**, the **euphonium/baritone horn**, and the **tuba**.

5. All **Brass instruments** have **three (3) things in common**:
   a. a **mouthpiece** (where the air enters the instrument)
   b. **tubing** (where the air vibrates and makes a sound)
   c. a **bell** (where the air exits the instrument)

6. There are two (2) ways to change the pitch of a Brass instrument:
   a. with **valves**
   b. with a **slide**

7. The Brass instruments with **valves** are the **trumpet**, the **French horn**, the **euphonium/baritone horn**, and the **tuba**.

8. The **French horn** is the only Brass instrument that is **played with the right hand inside the bell**. Also, the **French horn** player uses their **left hand to press the valves**. All other Brass instrument players press the valves with their right hand.

9. The **only** Brass instrument with a **slide** is the **trombone**. The player literally slides the “slide” to the desired position to change the pitch of the instrument.

10. The **tuba** is the only Brass instrument that MUST be played sitting down. The “marching” tuba is a **Sousaphone**. It sounds just like a tuba but wraps around the body of the player.

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The Percussion Family

1. The **Percussion** family is the **largest** and **oldest** of all the families of instruments. Archeologists have found ancient cave paintings of early humans playing percussion instruments.

2. **Percussion instruments** can be played in three (3) different ways:
   a. **struck** with a hand, stick, or mallet
   b. **shaken**
   c. **rubbed** together or **scraped** with an object

3. There are three (3) sections in the Percussion family:
   a. **Drum** section (a membrane stretched across an open end of a hollow casing)
   b. **Mallet** section (keys arranged in a keyboard pattern that are struck)
   c. **Auxiliary** section (any other kind of percussion instrument)

4. There are so many different percussion instruments! The **sound source** in percussion instruments will vary from one to the other. Always search for the **part of the instrument is which is vibrating**. That will be the sound source.

5. There are two (2) kinds of percussion instruments:
   a. **pitched percussion** instruments (can play **many** different pitches)
   b. **non-pitched percussion** instruments (can only play **one** pitch)

6. Some common **pitched percussion** instruments are the **xylophone**, the **marimba**, the **temple blocks**, the **glockenspiel** or **orchestra bells**, the **mark tree**, the **chimes**, and the **timpani drums**.

7. Some common **non-pitched percussion** instruments are the **snare, tenor, and bass drums**, the **timbales**, the **cymbals**, the **conga drum**, the **bongos**, and most of the small **auxiliary percussion instruments**.
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The Voice Family

1. The Voice family is the first family of instruments that people use to make music. It is also the only instrument that resides in the human body. People have two (2) kinds of voice: a speaking voice and a singing voice.

2. The sound source in the human voice are the vibrating vocal cords located within the larynx (voice box). The sound generator is the air passing through the vocal cords when the person exhales (breathes out).

3. A person’s voice is generated from parts of the respiratory and digestive systems in the human body and the air in the atmosphere.
   a. The body parts that produce the human voice are the nose, the jaw, the mouth, the tongue, the palate, the larynx (voice box), the vocal cords, the trachea (wind pipe), the lungs, and the diaphragm.
   b. The gases that make up Air are mainly 78% nitrogen and 21% oxygen. The remaining 3% of air is carbon dioxide, neon, and hydrogen.

4. When you inhale, air passes through the nose/mouth and the relaxed (open) vocal cords within the larynx, down the trachea, and into the lungs. Once air reaches the lungs, oxygen separates from other air gases and moves into the blood stream. The other gases are sent out of the body as you exhale.

5. Your voice is activated when you exhale. The brain signals the vocal cords to contract (close together). As air comes up the trachea and larynx, it meets the closed vocal cords and pushes against them to escape. Air seeps through the closed vocal cords and they begin to vibrate and make sound.

6. The size and thickness of vocal cords determines their pitch. Thicker and bigger vocal cords sound low. Thinner and smaller vocal cords sound high. Human voice parts are arranged from high to low pitch in this order:
   b. Adult voice: Soprano, Mezzo-Soprano, Alto, Tenor, Baritone, and Bass

7. A person’s vocal range is the gap between the lowest and highest vocal sound they can produce. A person’s tessitura are the pitches near the middle of their vocal range where they produce the most beautiful vocal sound and can sing or speak comfortably.