Using dichotomous keys, and creating individual dichotomous keys, are learning standards in most middle school science curricula. It teaches students how living things are grouped together by scientists, ultimately leading to their Genus and species name, making up their scientific name. Lesson Objectives: The following New York State Intermediate Science learning standards are addressed in this lesson: S2.1d use appropriate tools and conventional techniques to solve problems about the natural world, including: classifying. Standard 4 General Skills: 5. classify objects according to an established dichotomous key. Create their own complex dichotomous key for different types of fish species in the country.

Summary Each family of fishes in the Great Lakes region has physical traits that set it apart from others, called distinguishing characteristics. These characteristics help fish survive in their environment. By observing and comparing these features, students learn that fish, like other living organisms, can be organized and classified into meaningful groups for identification and further study. Background The Great Lakes region is home to an impressive variety of fish, numbering in the thousands. These fish have unique physical traits that set them apart from each other.

Activity: Identifying Butterflyfish Using Dichotomous Keys

Salmon-like fish can be identified using dichotomous keys. For example, in the key below, we can determine the common name of a fish with certain physical traits.

**Fish Dichotomous Key Directions:**

1. **If Fish Shape Is Long And Skinny** go to Step 2
2. **If Fish Has Pointed Fins** go to Step 3
3. **If The Fish Has Pointed Fins** go to another step

**Step 2:**

- If Fish Shape Is Long And Skinny, go to Step 3
- If Fish Has Pointed Fins, go to another step

**Step 3:**

- If The Fish Has Pointed Fins, go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 4:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 5:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 6:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 7:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 8:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

**Step 9:**

- **If Fish Has Pointed Fins** go to another step
- **If Fish Has Pointed Fins** go to another step

By following these steps, we can identify the common name of the fish depicted below.