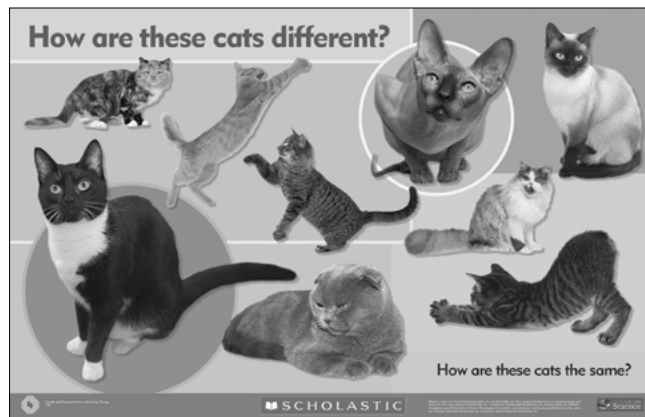


How Can We Compare Living Things?



Focus: Students will compare individual humans or other animals of the same species and identify shared and unique characteristics.

Specific Curriculum Outcomes

Students will be expected to:

- 35.0 identify and describe common characteristics of humans and other animals, and identify variations that make each person and animal unique [GCO 1/3]

Performance Indicators

Students who achieve these outcomes will be able to:

- identify and describe characteristics shared by all humans and characteristics that make individual humans unique
- view a collection of images of animals of the same species (such as dogs) and identify and describe characteristics that are common to all of that species and characteristics that are unique to an individual of the species.

NOTES:

Attitude Outcome Statements

Encourage students to:

- show interest in and curiosity about objects and events within the immediate environment [GCO 4]
- be sensitive to the needs of other people, other living things, and the local environment [GCO 4]

Cross-Curricular Connections

English Language Arts

Students will be expected to:

- interact with sensitivity and respect, considering the situation, audience, and purpose [GCO 3]
- select, read, and view with understanding a range of literature, information, media, and visual text [GCO 4]

Getting Organized

Components	Materials	Before You Begin	Vocabulary
• Science Card 4 • BLM <i>Comparing Animals: Venn Diagram</i> • BLM <i>Comparing Dogs</i> • IWB Activity 6 • BLM <i>My Unique Face</i> Literacy Place: • <i>Same and Different</i> (Guided Reading, Level E)	• photographs, books, and videos showing different individuals from the same species (e.g., books about dogs, a video about horses) • large sheets of black construction paper or poster board • white crayon or chalk	• If desired, invite a farmer, or a breeder of dogs or other animals, to come to class to talk to the students about how different breeds of the same animal compare, and how individuals within a breed compare.	• shared characteristic • unique characteristic

Science Background

- In biology, a species is a group of organisms with similar physical characteristics that normally interbreed only among themselves.
- To check whether two animals you want to compare are of the same species, search for their Latin, or formal name. The formal name for a species consists of the genus name and then the species name itself. The genus name is always capitalized and the species name is always lowercased. Both are written in italics. This system of naming is called binomial nomenclature. For example, all humans belong to the species *Homo sapiens*. “*Homo*” identifies the genus; “*sapiens*” identifies the species. Here are a few other examples:

- Woodland caribou: *Rangifer tarandus*
- Wolverine: *Gulo gulo*
- Common loon: *Gavia immer*
- Red-throated loon: *Gavia stellata*
- Subspecies can be designated using a third latin term. For example, the grey wolf is *Canis lupus lupus*, while the domesticated dog is *Canis lupus familiaris*.
- Humans establish different breeds of domesticated animals of the same species such as horses, cows, dogs, and cats by choosing which individuals can mate. Breeders choose desirable physical or behavioural traits, such as good milk production in cows, or friendliness in dogs, and mate animals with those traits. A distinct breed develops, with individuals that tend to share characteristics. For example, Newfoundland ponies are sturdy and strong, while Thoroughbred horses have long legs and can run very fast.

ACTIVATE

Comparing Animals

Initiate a discussion with the class and invite students to compare and contrast similar animals. Allow comparisons of animals from different species such as a fox with a dog, or an ostrich with a hummingbird. Ask:

- How are these animals the same?
- How are they different?



Literacy Place Connection:

Same and Different (Guided Reading, Level E) compares the observable physical characteristics of a girl and her puppy. Invite students to choose another animal and tell how they are the same and how they are different from that animal.

Comparing Ourselves

Play comparing games such as the two described below to let students practise noticing similarities and differences among people's observable physical characteristics. Sensitivity is required here: avoid highlighting characteristics that might make students feel uncomfortable or singled out, such as weight.

You're Like Me!

Have students take turns observing physical characteristics that they share with other students. For example, Steven could say, "I have two eyes and so does Mayim." Mayim could then say, "I have freckles and so does Callum," and so on. To make the game more challenging, students should repeat the physical characteristics said by each student before them and then add a new observation.

Stand Up If...

Have students all sit down. Then call out observable physical characteristics. Students who exhibit those characteristics should stand up. After the first turn, students who do not exhibit the next characteristic called out should sit down. Include some silly ones for fun. Here are some examples:

- Stand up if you have blue eyes.
- Stand up if you have long hair.
- Stand up if you have brown hair.
- Stand up if you have curly hair.
- Stand up if you have purple hair.
- Stand up if you have two legs.
- Stand up if you have eight tentacles.

After playing the games, post the words “unique” and “shared” on the Word Wall. Ask students:

- **What does “unique” mean?**
- **What characteristics make individual humans unique?**
- **What does “shared” mean?**
- **What characteristics do all humans share?**

Encourage students to ask questions after playing the games and record their questions on the I Wonder Wall.



CONNECT



Comparing Cats

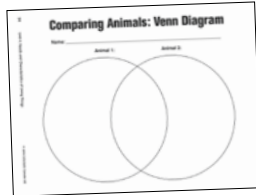
With the class, or in smaller groups, show students Science Card 4. (Clockwise from top left: calico cat, marmalade cat, short-haired tabby cat, hairless Sphinx cat, Siamese cat, long-haired cat, Manx cat, British fold cat, tuxedo cat) Model a comparison by choosing two cats and describing a few ways in which they look different and a few ways in which they look the same. Then choose two different cats and ask:

- **How are these cats different?**
- **How are they the same?**

On chart paper or the IWB, model the use of a Venn diagram to compare two of the cats.

Collaborative Comparing

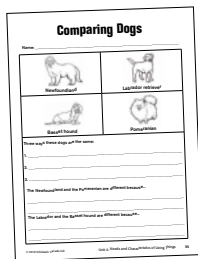
Set up two or three mini-centres for students to practise comparing animals of the same species. Collect pictures, books, and digital resources showing different animals of the same species. For example, you could have centres for two or three of the following animals for students to discuss and compare:



- goldfish
- ducks
- wolves
- horses
- cows

Have each student choose two different images showing different individuals of the same species (or one image that includes two or more different animals of the same species). In pairs or small groups, students can describe the similarities and differences between their animals. They can then use BLM *Comparing Animals: Venn Diagram* to compare their animals.

CONSOLIDATE



Independent Comparing

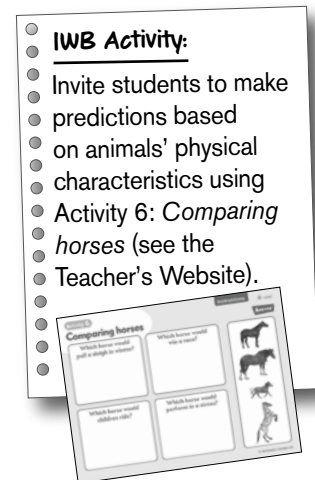
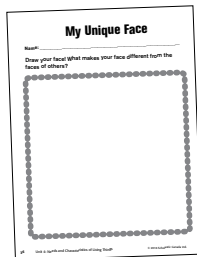
Provide copies of BLM *Comparing Dogs* and have students point out similarities and differences in animals of the same species.

Profile Silhouettes

Create profile silhouettes of students' heads on black construction paper using white crayon or chalk. Mix up the drawings and then hold them up. Ask:

- Who do you think this is?
- What do you see on the silhouette that tells you that?

Have students use BLM *My Unique Face* to draw a picture of their face and identify some features that distinguish them from others.



EXPLORE MORE

Research Human Variation

Provide books at the Reading Centre that allow students to investigate variations in genetic traits among humans, such as left or right dominant hand, ability to roll the tongue, ear lobe attachment, and hair line shape.

Research Differences in Breeds of Domestic Animals

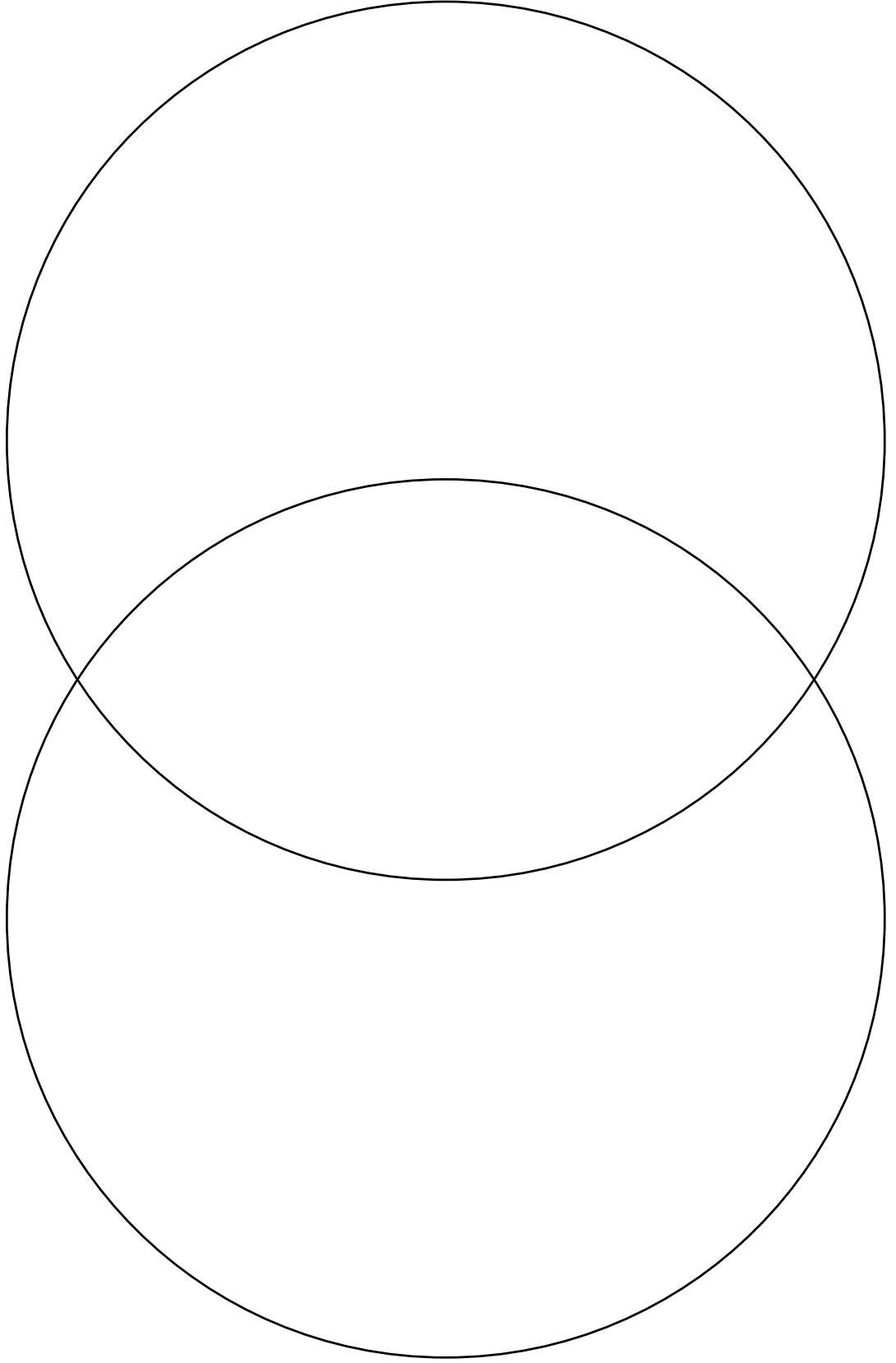
If possible, have an animal breeder or a farmer come in to talk to students about the differences in various breeds of animals or cultivars of crops such as apples or potatoes. Students can draw pictures with labels to show what they learned.

Comparing Animals: Venn Diagram

Name: _____

Animal 1:

Animal 2:



Comparing Dogs

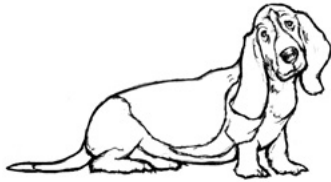
Name: _____



Newfoundland



Labrador retriever



Basset hound



Pomeranian

Three ways these dogs are the same:

1. _____
2. _____
3. _____

The Newfoundland and the Pomeranian are different because...

The Labrador and the Basset hound are different because...

My Unique Face

Name: _____

Draw your face! What makes your face different from the faces of others?

