

My Dog Jack

Last year we adopted a dog from the shelter. His name is Jack. He is big and white and has brown ears. Jack is very friendly—unless he’s feeling protective. Then he barks very loudly, especially when someone rings the doorbell.

My dog Jack is a mixture of several breeds, but we know he is part Great Pyrenees. How do we know? He has a unique double toenail called a “double dew.” The double toenail points in two different directions. In the Great Pyrenees’ original mountain environment, the double dew helped the dogs keep their grip.

The Great Pyrenees is what is called a working dog. It was bred to protect sheep. These dogs are nocturnal, which means they are active at night. This is a good trait if you’re protecting a flock of sheep. There’s no sleeping on the job when predators are around. When I get up in the middle of the night, Jack follows me to the bathroom. I like to think he’s working to keep me safe.

Jack has a little bit of Saint Bernard in him, too. We think that’s where Jack got his brown ears from. The Saint Bernard is another breed of working dog. They are known for rescuing travelers who got lost in the snowy mountains, but the breed is suspected to have been started long ago by monks in France who bred them to protect the monastery.

Jack was already two years old when we got him. He doesn’t chase balls or run very much. We tried to teach him but he is just not interested. He knows one trick, though. He likes to shake hands. We hope to be

able to teach him to high-five, too. We are trying to teach Jack not to bark every time the doorbell rings.

Questions:

1. How do you think dogs like the Great Pyrenees came to be called “working dogs”?
2. Describe a unique, inherited physical trait of a Great Pyrenees. How does the trait help the dog in a mountain environment?
3. What is a behavioral trait the author would like Jack to learn?



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Mi perro Jack

El año pasado adoptamos un perro del refugio. Su nombre es Jack. Es grande, blanco y tiene orejas marrones. Jack es muy amigable—salvo que se sienta protector. Entonces se pone a ladrar muy fuerte, especialmente si alguien toca el timbre de la puerta.

Mi perro Jack es una mezcla de varias razas, pero sabemos que es en parte un Gran Pirineo. ¿Cómo lo sabemos? Él tiene una garra doble llamada “espolón doble.” La garra doble apunta en dos direcciones distintas. En el ambiente montañoso original del Gran Pirineo, el espolón doble le ayudaba a los perros a mantener su tracción en el suelo.

El Gran Pirineo es lo que llamamos un perro de trabajo. Se los criaba para proteger a las ovejas. Estos perros son nocturnos, lo que significa que están activos durante la noche. Este es un muy buen rasgo si quieres proteger un rebaño de ovejas. No hay tiempo para dormir en el trabajo cuando hay depredadores cerca. Cuando me levanto en la mitad de la noche, Jack me sigue al baño. Me gusta pensar que está trabajando para mantenerme a salvo.

Jack también tiene un poco de San Bernardo. Creemos que es de ahí de donde Jack saca sus orejas marrones. El San Bernardo es otra raza de perros de trabajo. Se los conoce por rescatar a los viajeros que se pierden en las montañas nevadas, pero se sospecha que la raza la iniciaron hace mucho tiempo los monjes en Francia, quienes los criaban para proteger el monasterio.

Jack ya tenía dos años cuando lo trajimos. No persigue pelotas ni corre mucho. Tratamos de enseñarle, pero simplemente no le interesa. Sin embargo, sabe un truco.

Le gusta dar la pata. Esperamos poder enseñarle a chocar los cinco también. Estamos intentando enseñarle a Jack a no ladrar cada vez que suena el timbre.

Preguntas:

1. ¿Cómo crees que los perros como los Grandes Pirineos pasaron a llamarse “perros de trabajo”?
2. Describe un rasgo físico heredado único de un Gran Pirineo. ¿Cómo lo ayuda este rasgo al perro en un ambiente de montaña?
3. ¿Cuál es un rasgo de comportamiento que el autor querría que Jack aprenda?



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Take-Home Science

Dear Family,

Our class is beginning an inquiry science unit. Inquiry science is all about questions, active explorations, drawing, writing, and recording what you see and do to build an understanding of science. Young children are natural scientists. Scientists question everything. Once scientists answer one question, they move without blinking to the next question.

Take-Home Science is an exciting part of our program because it's one way we can better connect home and school. With everyone working together, we can reinforce the science concepts that your student is exploring in the classroom. Here's how Take-Home Science works.

Your student will bring home an investigation sheet that explains an activity related to the science unit the class is studying. The activity is designed so that everyone in the household—younger and older children alike—can work together to learn about science.

A section of the investigation sheet explains the science words and ideas that will be explored during the activity. These science words and ideas are not new to your student because the activity follows a lesson in which those same concepts were explored.

The activities are simple and can be completed within 20 minutes using items normally found in the home. A section of the investigation sheet is for your student to complete and bring back to school. In class, students will have the opportunity to share their experiences and results with one another.

The activities are intended to be quick, informal, and fun. Enjoy!



GO EXPLORING!

Observing Birds and Their Feeding Patterns

Make two bird feeders out of repurposed plastic bottles and hang them on a tree near your home. Observe the kinds of birds and the type of seed they eat. Record your observations on the chart on the next page. Observe the birds for one week, taking special note of the shapes of their beaks and how they use their beaks to eat the seeds.

Bird Buffet

Challenge: Observe the types of birds that are attracted to the two different types of seeds, and determine how the shapes of their beaks help them eat their food of choice.

Who: You and any person who will help (like brothers, sisters, parents, or friends).

1. What to look for: Which birds eat each type of seed you selected.

2. What to record: Complete the chart on the next page. Record the types of birds you see at the feeders for one week. Note how the shapes of their beaks help them eat their food.

3. What to report: After one week, bring your completed chart to class. Be prepared to share what you have found.

Equipment:

- 2 Plastic bottles of the same size, with caps (any size from 20 oz to 2 L)
- 1 Pair of sharp scissors or a utility knife
- 1 Marker
- Strong string
- Two different kinds of birdseed
- 1 Ruler or tape measure

How to make a bird feeder out of a plastic bottle:

Step 1: Halfway down from the top of your bottle, use a marker to draw a window. On the opposite side of the bottle, draw another window. Try to make both the windows the same size. You may use a ruler or tape measure to help create straight lines.

Step 2: Have an adult help you cut the left, top, and right side of each window. Fold the flap down to provide a landing spot for the birds to perch on while they eat. If the plastic is too stiff, use the flat end of your scissors to help crease the plastic.

Step 3: Put the cap on the bottle.

Step 4: Cut two pieces of string, each about 25 cm long. Tie one end of each string securely around the mouth of the bottle. Make sure the loose ends of the strings are on opposite sides. Tie the loose ends of the strings together in a tight knot to create a loop. You will hang the feeder from this string.

Step 5: Choose two types of bird seed. Label each feeder with the type of seed you will fill it with.

Step 6: Fill the bottom of each feeder with one of the two types of seed you chose. Be careful not to mix seeds!

Step 7: Hang the two bird feeders on tree branches near your home, and observe the different kinds of birds that eat each type of seed for one week.

Name _____

Date _____

Observing Birds and Their Feeding Patterns

A. Observe and Record

Draw and describe each type of bird you observe.	Draw and describe the beak shape and how the bird uses its beak.	Which type of seed did this bird mostly eat?

B. Analyze

How did the type of beak affect what type of seed you observed each bird eat? _____

Ciencia para llevar a casa

Querida familia,

Nuestra clase está comenzando una unidad de ciencia inquisitiva. La ciencia inquisitiva se trata de preguntas, exploraciones activas, dibujos, redacciones y grabaciones de lo que ven y hacen para crear un mayor entendimiento de la ciencia. Los niños pequeños son científicos naturales. Los científicos cuestionan todo. Cuando los científicos responden una pregunta, pasan sin titubear a la siguiente.

Ciencia para llevar a casa es una parte emocionante de nuestro programa porque es una forma en que podemos conectar mejor la escuela y nuestro hogar. Si todos trabajan juntos, podemos reforzar los conceptos científicos que el alumno explora en el aula. Así funciona la ciencia para llevar a casa.

El alumno llevará a casa una hoja de investigación que explica una actividad relacionada con la unidad de ciencia que la clase está estudiando. La actividad está diseñada para que todos los miembros de la familia (hijos más pequeños y más grandes por igual) puedan trabajar juntos para aprender sobre ciencia.

Una sección de la hoja de investigación explica la terminología científica y las ideas que se explorarán durante la actividad. Esta terminología científica y las ideas no son nuevas para el alumno, ya que la actividad sigue a una clase en la que se exploraron esos mismos conceptos.

Las actividades son simples y se pueden completar en 20 minutos usando artículos que se hallan normalmente en una casa. Una sección de la hoja de investigación es para que su alumno la complete y la regrese a la escuela. En clase, los alumnos tendrán la oportunidad de compartir sus experiencias y resultados con los compañeros.

Las actividades deben ser rápidas, informales y divertidas. ¡A disfrutar!



¡SALGAN A EXPLORAR!

Observación de las aves y sus patrones de alimentación

Haz dos comederos para aves de botellas plásticas recicladas y cuélgalos en un árbol cerca de tu casa. Observa los tipos de aves y el tipo de semillas que comen. Registra tus observaciones en la tabla de la página siguiente. Observa las aves durante una semana, tomando nota muy especialmente de la forma de sus picos y cómo los usan para comer las semillas.

Buffet para aves

Desafío: Observa los tipos de aves que son atraídas por los dos tipos distintos de semillas, y determina cómo la forma de sus picos las ayudan a comer la comida que prefieren.

Quién: Tú y cualquier persona que te quiera ayudar (por ejemplo, hermanos, hermanas, padres o amigos).

1. Qué observar: Qué aves comen cada tipo de las semillas que elegiste.

2. Qué registrar: Completa la tabla de la página siguiente. Registra los tipos de aves que ves en los comederos durante una semana. Nota cómo la forma de sus picos las ayudan a comer su comida.

3. Qué informar: Después de una semana, trae tu tabla completada a clase. Prepárate para compartir lo que descubriste.

Materiales:

- 2 botellas plásticas del mismo tamaño, con tapas (cualquier tamaño desde 20 oz a 2 L)
- 1 par de tijeras afiladas o una navaja multiuso
- 1 marcador
- Cordón fuerte
- Dos tipos distintos de semillas para aves
- 1 regla o cinta métrica

Cómo hacer un comedero de aves con una botella plástica:

Paso 1: Con un marcador, dibuja una ventana a la mitad de la botella. Dibuja otra ventana en el lado opuesto de la botella. Trata de hacer las dos ventanas del mismo tamaño. Puedes usar una regla o cinta métrica para ayudarte a hacer líneas rectas.

Paso 2: Pídele a un adulto que te ayude a cortar los lados izquierdos, superiores y derechos de cada una de las ventanas. Dobla hacia abajo la solapa resultante para darles un área de apoyo a las aves mientras comen. Si el plástico es demasiado duro, usa el extremo chato de tus tijeras para doblar el plástico.

Paso 3: Coloca la tapa en la botella.

Paso 4: Corta dos pedazos de cordón, de aproximadamente 25 cm de largo cada uno. Ata un extremo de cada cordón firmemente a la boca de la botella. Asegúrate de que los extremos sueltos de los cordones estén en lados opuestos. Ata los extremos sueltos de los cordones con un nudo ajustado para crear un lazo. El comedero se colgará con este cordón.

Paso 5: Elige dos tipos de semilla para aves. Etiqueta cada comedero con el tipo de semilla con el que lo llenarás.

Paso 6: Llena el fondo de cada comedero con uno de los dos tipos de semilla que elegiste. ¡Ten cuidado de no mezclar las semillas!

Paso 7: Cuelga los dos comederos para aves en las ramas de un árbol cerca de tu casa, y observa los diferentes tipos de aves que comen cada tipo de semilla por una semana.

Nombre _____

Fecha _____

Observación de las aves y sus patrones de alimentación

A. Observa y registra

Dibuja y describe cada tipo de ave que observes.	Dibuja y describe la forma del pico y cómo el ave usa su pico.	¿Qué tipo de semilla comió más esta ave?

B. Analiza

¿Cómo afectó el tipo de pico al tipo de semilla que cada ave observada comía? _____

Two Sensational Sharks

The whale shark is the biggest fish in the world. It can grow to be the size of a school bus! Despite its name, the whale shark is not a whale at all. Unlike a whale, it uses gills to take in oxygen from the water. It has a skeleton made of cartilage. It is a fish, like other sharks.

The whale shark is a gentle giant—unless you are plankton, that is. “Plankton” is a general name for tiny organisms that float with water currents. The whale shark vacuums up plankton with its giant mouth by the tens of thousands. It uses its teeth and filter pads to separate food from water and nonfood items. Whale sharks can have over 300 rows of tiny teeth!

Most sharks have razor-sharp teeth. They thrash their prey from side to side, tearing and sawing the prey’s flesh. The great white shark has fewer rows of teeth than the whale shark, but the great white shark’s teeth are larger and sharper. Scientists have been studying great white sharks and have found that when they hunt prey such as seals, great whites can get up to speeds of 10 meters (33 feet) per second! This fish also has a keen sense of smell that can detect prey at great distances. The great white shark has a two-tone color scheme. It is light on the underside and dark on top. The light side makes it less visible to prey from underneath, when sunlight shines from above.

Most species of shark are solitary, which means they prefer to live alone. Sharks sometimes travel long distances in search of food. Sometimes there is a lot of food

in a small area. At these times, the sharks gather in one place.

Questions:

1. What adaptation causes a whale shark to be classified as a fish?
2. Compare and contrast the teeth of a whale shark with the teeth of a great white shark.
3. How is a great white shark’s coloration an adaptation that helps it catch prey?



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Dos tiburones sensacionales

El tiburón ballena es el pez más grande del mundo. ¡Puede crecer hasta llegar al tamaño de un autobús escolar! Pese a su nombre, el tiburón ballena no es una ballena. A diferencia de las ballenas, tiene branquias para tomar el oxígeno del agua. Tiene un esqueleto cartilaginoso. Es un pez, al igual que otros tiburones.

El tiburón ballena es un gigante gentil—salvo que seas plancton, claro. “Plancton” es un nombre genérico que se le da a los diminutos organismos que flotan en las corrientes de agua. El tiburón ballena aspira plancton de a decenas de miles con su boca gigante. Usa sus dientes y almohadillas filtrantes para separar la comida y lo no comestible del agua. ¡Los tiburones ballena pueden tener más de 300 filas de dientes diminutos!

La mayoría de los tiburones tienen dientes afilados como navajas. Destrozan a su presa de lado a lado, desgarrando y cortando la carne de la presa. El gran tiburón blanco tiene menos filas de dientes que el tiburón ballena, pero los dientes del gran tiburón blanco son más grandes y más afilados. Los científicos han estudiado al gran tiburón blanco y han descubierto que cuando caza presas como las focas, ¡puede llegar a alcanzar velocidades de hasta 10 metros (33 pies) por segundo! Este pez también tiene un agudo sentido del olfato que puede detectar a su presa a grandes distancias. El gran tiburón blanco tiene una combinación de dos colores. Es claro en su parte inferior y oscuro en la superior. El lado claro hace que sea menos visible para la presa desde abajo, cuando el sol brilla encima.

La mayoría de las especies de tiburón son solitarias, lo que significa que prefieren vivir solos. Los tiburones a veces se desplazan

grandes distancias buscando comida. A veces hay mucha comida en un área pequeña. En esas ocasiones, los tiburones se reúnen en un lugar.

Preguntas:

- 1.** ¿Qué adaptación hace que se lo clasifique al tiburón ballena como un pez?
- 2.** Compara y contrasta los dientes del tiburón ballena con los dientes del gran tiburón blanco.
- 3.** ¿De qué manera es la coloración del gran tiburón blanco una adaptación que lo ayuda a cazar a su presa?



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Diversity in the Rain Forest

Tropical rain forests are found in warm, sunny, wet areas. They receive up to 660 centimeters (260 inches) of rain a year. The trees in the rain forest are so tall and leafy that almost no light reaches the ground below them. Trees have to grow quickly to reach the light.

Most rain forests have four distinct parts. The tallest trees make up the emergent layer. These tall trees look like mushrooms over the thick layer of trees below. Sloths, bats, birds, and butterflies live here.

The leaves of slightly shorter trees form the canopy. It spreads over the rain forest like an umbrella. Bright birds such as toucans live among the leaves and branches. If you looked down on the canopy from above, you might see iguanas or snakes sunning themselves among the branches.

Beneath the canopy is the understory. Plants in this layer have large, wide leaves take in as much light as possible. Beautiful orchids live on tree trunks. Lots of insects fill the air. If you look very closely, you might see a red-eyed tree frog.

You hear a loud noise. Look up! It's a troop of howler monkeys. They get their name from the way they communicate with one another. Howler monkeys eat a variety of leaves and fruits. Their calls are getting quieter. They must be moving away.

The lowest part is the forest floor. Only plants that can grow in deep shade can live in this dark environment. Leaves from taller

plants fall to the forest floor. They decay quickly in the hot, damp environment. Giant anteaters push aside the leaves to find food.

People cut down rain forest trees for lumber. They clear rain forests for large-scale farming and mining. When the trees are cut down, the soil washes away, and then it is no longer good for farming.

The rain forests must be protected. Rain forests produce oxygen. They provide food and shelter for many different communities of living things. It's important to learn about the plants and animals that live in the rain forest. This helps people know how to protect them.

Questions:

1. How can tropical rain forests support so many types of organisms?
2. Plants in the understory layer have wide leaves. Why do you think that is?
3. What evidence does the article give for how humans impact this ecosystem?



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La diversidad en la selva tropical

Las selvas tropicales se encuentran en áreas cálidas, soleadas y húmedas. Reciben unos 660 centímetros (260 pulgadas) de lluvia al año. Los árboles de la selva tropical son tan altos y frondosos que la luz casi no llega al suelo debajo de ellos. Los árboles tienen que crecer rápidamente para alcanzar la luz.

La mayoría de las selvas tropicales tienen cuatro partes distintas. Los árboles más altos constituyen la capa emergente. Estos árboles altos parecen hongos sobre la gruesa capa de árboles debajo. Los perezosos, murciélagos, pájaros y mariposas viven aquí.

Las hojas de los árboles un poco más bajos forman el dosel. Se esparce sobre la selva tropical como un paraguas. Pájaros brillantes como los tucanes viven entre las hojas y las ramas. Si miraras este dosel desde arriba, podrías llegar a ver iguanas o serpientes tomando sol entre las ramas.

Debajo del dosel está el sotobosque. Las plantas en esta capa tienen hojas grandes y anchas que toman toda la luz que les es posible. Orquídeas hermosas viven en los troncos de los árboles. Muchos insectos pueblan el aire. Si miras con detenimiento, puede que veas una rana arbórea de ojos rojos.

Oyes un ruido fuerte. ¡Mira arriba! Es un grupo de monos aulladores. Obtienen su nombre por la forma en que se comunican entre sí. Los monos aulladores comen una variedad de hojas y frutas. Sus aullidos se están acallando. Deben de estar alejándose.

La parte más baja de la selva es el suelo. Solo las plantas que pueden crecer en una sombra profunda pueden vivir en este

ambiente oscuro. Las hojas de las plantas más altas caen al suelo de la selva. Se descomponen rápidamente en el ambiente caluroso y húmedo. Los osos hormigueros gigantes se hacen paso entre las hojas para encontrar su comida.

La gente tala los árboles del bosque para obtener madera. Despejan las selvas tropicales para la agricultura a gran escala y para la minería. Cuando se talan los árboles, el suelo se erosiona y entonces ya no es bueno para la agricultura.

Se tienen que proteger las selvas tropicales. Las selvas tropicales producen oxígeno. Brindan comida y refugio a muchas comunidades diferentes de seres vivos. Es muy importante aprender acerca de las plantas y los animales que viven en la selva tropical. Esto ayuda a que las personas sepan cómo protegerlas.

Preguntas:

1. ¿Cómo pueden las selvas tropicales sostener tantos tipos de organismos?

2. Las plantas en la capa del sotobosque tienen hojas anchas. ¿Por qué crees que es esto?

3. ¿Qué evidencia da el artículo en cuanto al impacto de los humanos sobre este ecosistema?



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Teacher Sheet: Science in the News Article Report

To help students understand a concept, it is often helpful to associate it with an event or phenomenon. Depending on the topic, students may be able to draw connections to recent events in the news or to historical events in your area. Using a literacy tool like an article report is a helpful way to bring in literacy, reading comprehension, and science topics at any grade level.

Science in the News articles can be assigned at any point during a unit to assist students in seeing the “real-world connection” to a particular concept. These articles should be provided by the teacher in lower grades, but students in grades 3–5 may be ready for the challenge of selecting their own articles independently. The following guidelines will help you find appropriate articles. If you ask students to locate their own articles, you may wish to provide some of these guidelines along with the specific requirements for the assignment. Students at all grades are provided with an article report sheet to help them analyze their article and draw connections between it and the unit concepts. For students in grades 3–5, a rubric is provided in this appendix to help them to evaluate an article for bias and credibility.

1. Choose a topic that aligns with content

- Look for an article that will be engaging to students. It might be helpful to use local news sources or current events. Try to find a topic that students will be able to relate to and find interesting. For example, students will find greater interest in relating chemical reactions to cooking than in a laboratory setting.

2. Seek appropriate articles

- Typical news sites contain text that is likely too complex for elementary students. Use a search engine to find websites that provide kid-friendly news. Many of these websites align their content by grade level and cover a variety of topics.
- Though news is more frequently updated on websites, it is also possible to use text sources, such as kid-friendly newspapers or magazines.

3. Determine the credibility of the source

- It is very important to choose an article from a credible source to avoid bias and false news. Use the credibility rubric to assess sources before selecting articles.

4. Read the article

- Once you have chosen an article of interest, read it to determine its connection to the unit content. Take note of any new or unfamiliar terms so they can be reviewed later.

Differentiation Strategy

If you are selecting the article, consider editing the text to differentiate instruction.

5. Ask students to read the article and complete an article report sheet. Remind them to:

- Provide information about where the article was found.
- Answer questions about the current event and draw connections to what they have learned during the unit.

Science in the News: Article Report

Name: _____

Date: _____

Title of article: _____

Author: _____

Date published: _____

Source: _____

Type of news: ____ Local ____ National ____ International

1. Summarize your article. What happened? When did it happen? Who was involved? Where did it happen? Why did it happen? _____

2. Why is this article important? _____

3. What did you learn from this article? Was anything surprising? _____

Name: _____

Date: _____

Write one question you have after reading the article. _____

How does this article relate to the topics covered in this unit? _____

Science in the News: Article Credibility Rubric

Directions: Use the rubric to determine the credibility of your Science in the News article.

Criteria	3	2	1	Rating
Author	The author's name is easy to find.	Author's name is not easy to find.	The author's name cannot be found.	
Source/ Publisher	The source of the article is well-known and contains many news reports.	The source of the article does not contain many news reports. I have never heard of the publisher.	The source of this article does not have many news reports.	
Update frequency	This event occurred recently.	This event occurred within the past five years.	This event occurred many years ago.	
Opinion/ Bias	The article reports on an event and does not provide opinion.	The article contains facts, but also the author's opinion.	The article contains the author's opinion and presents information that may not be fact.	
Science Impact	Scientific findings and results appear to be accurate and has strong evidence for support.	The scientific findings might be exaggerated and do not have evidence. I do not understand the scientific findings.	The science discussed in the article is incorrect and there is no evidence.	

1. Do you think this news article is credible? Explain why or why not. _____

My Dog Jack

Last year we adopted a dog from the shelter. His name is Jack. He is big and white and has brown ears. Jack is very friendly—unless he's feeling protective. Then he barks very loudly, especially when someone rings the doorbell.

My dog Jack is a mixture of several breeds, but we know he is part Great Pyrenees. How do we know? He has a unique double toenail called a “double dew.” The double toenail points in two different directions. In the Great Pyrenees’ original mountain environment, the double dew helped the dogs keep their grip.

The Great Pyrenees is what is called a working dog. It was bred to protect sheep. These dogs are nocturnal, which means they are active at night. This is a good trait if you're protecting a flock of sheep. There's no sleeping on the job when predators are around. When I get up in the middle of the night, Jack follows me to the bathroom. I like to think he's working to keep me safe.

Jack has a little bit of Saint Bernard in him, too. We think that's where Jack got his brown ears from. The Saint Bernard is another breed of working dog. They are known for rescuing travelers who got lost in the snowy mountains, but the breed is suspected to have been started long ago by monks in France who bred them to protect the monastery.

Jack was already two years old when we got him. He doesn't chase balls or run very much. We tried to teach him but he is just not interested. He knows one trick, though. He likes to shake hands. We hope to be

able to teach him to high-five, too. We are trying to teach Jack not to bark every time the doorbell rings.

Questions:

1. How do you think dogs like the Great Pyrenees came to be called “working dogs”? (*Answers will vary. Students may suggest that working dogs have jobs to do, like herding sheep, protecting animals, or guarding property.*)
2. Describe a unique, inherited physical trait of a Great Pyrenees. How does the trait help the dog in a mountain environment? (*The Great Pyrenees has a “double dew” toenail, which helps it grip on mountainous terrain.*)
3. What is a behavioral trait the author would like Jack to learn? (*To not bark at the doorbell or to give a high-five.*)



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Two Sensational Sharks

The whale shark is the biggest fish in the world. It can grow to be the size of a school bus! Despite its name, the whale shark is not a whale at all. Unlike a whale, it uses gills to take in oxygen from the water. It has a skeleton made of cartilage. It is a fish, like other sharks.

The whale shark is a gentle giant—unless you are plankton, that is. “Plankton” is a general name for tiny organisms that float with water currents. The whale shark vacuums up plankton with its giant mouth by the tens of thousands. It uses its teeth and filter pads to separate food from water and nonfood items. Whale sharks can have over 300 rows of tiny teeth!

Most sharks have razor-sharp teeth. They thrash their prey from side to side, tearing and sawing the prey's flesh. The great white shark has fewer rows of teeth than the whale shark, but the great white shark's teeth are larger and sharper. Scientists have been studying great white sharks and have found that when they hunt prey such as seals, great whites can get up to speeds of 10 meters (33 feet) per second! This fish also has a keen sense of smell that can detect prey at great distances. The great white shark has a two-tone color scheme. It is light on the underside and dark on top. The light side makes it less visible to prey from underneath, when sunlight shines from above.

Most species of shark are solitary, which means they prefer to live alone. Sharks sometimes travel long distances in search of food. move. Sometimes there is a lot of

food in a small area. At these times, the sharks gather in one place.

Questions:

1. What adaptation causes a whale shark to be classified as a fish? *(A whale shark takes in oxygen from the water through gills, like fish do.)*

2. Compare and contrast the teeth of a whale shark with the teeth of a great white shark. *(Both species of shark have rows of teeth. The whale shark's teeth are modified to filter tiny organisms. The great white shark has fewer rows of teeth, but their teeth are larger and sharper than those of a whale shark.)*

3. How is a great white shark's coloration an adaptation that helps it catch prey? *(A great white's light underside makes it hard to see from below against the backdrop of the sunlight coming through the surface of the water.)*



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Diversity in the Rain Forest

Tropical rain forests are found in warm, sunny, wet areas. They receive up to 660 centimeters (260 inches) of rain a year. The trees in the rain forest are so tall and leafy that almost no light reaches the ground below them. Trees have to grow quickly to reach the light.

Most rain forests have four distinct parts. The tallest trees make up the emergent layer. These tall trees look like mushrooms over the thick layer of trees below. Sloths, bats, birds, and butterflies live here.

The leaves of slightly shorter trees form the canopy. It spreads over the rain forest like an umbrella. Bright birds such as toucans live among the leaves and branches. If you looked down on the canopy from above, you might see iguanas or snakes sunning themselves among the branches.

Beneath the canopy is the understory. Plants in this layer have large, wide leaves to take in as much light as possible. Beautiful orchids live on tree trunks. Lots of insects fill the air. If you look very closely, you might see a red-eyed tree frog.

You hear a loud noise. Look up! It's a troop of howler monkeys. They get their name from the way they communicate with one another. Howler monkeys eat a variety of leaves and fruits. Their calls are getting quieter. They must be moving away.

The lowest part is the forest floor. Only plants that can grow in deep shade can live in this dark environment. Leaves from taller plants fall to the forest floor. They decay quickly in the hot, damp environment. Giant anteaters push aside the leaves to find food.

People cut down rain forest trees for lumber. They clear rain forests for large-scale farming and mining. When the trees are cut down, the soil washes away, and then it is no longer good for farming.

The rain forests must be protected. Rain forests produce oxygen. They provide food and shelter for many different communities of living things. It's important to learn about the plants and animals that live in the rain forest. This helps people know how to protect them.

Questions:

1. How can tropical rain forests support so many types of organisms? *(The climate of a tropical rain forest is warm, sunny, and wet year-round. These conditions are perfect for many kinds of plants and animals, and so many types of living things make their homes here.)*

2. Plants in the understory layer have wide leaves. Why do you think that is? *(Students should recognize that plants in the understory are shaded by trees in the canopy, so have access to less sunlight. The wider leaves help the plants in this layer take in as much sunlight as possible. Plants need sunlight to make food and survive.)*

3. What evidence does the article give for how humans impact this ecosystem? *(The article states that people cut down trees for lumber and to clear land for farming and mining.)*