

No. 48231

# Junior Rubbing Plates



Reveal beautiful textures of the natural world with simplified animal rubbing plates! Enhance fine motor skills, create line art, and encourage touch-sensory development while learning about the six featured animals. Place a sheet of paper over the rubbing plate and rub a stick of crayon or pastel across the paper. Use different colors, turn the rubbing plate in a different direction or rub across a desired texture area to make unique pop art projects!

Tape down one junior size rubbing plate onto a flat surface, then place a sheet of art paper over top. Tape down the edges of the paper for greater stability while rubbing across the plate. Tip: Tape the rubbing plates onto inexpensive clipboards and use the clip to hold the paper in place. Alternatively, use a rubberized shelf liner or placemat to hold the plates in place on the desk top. Use pencil crayons, crayons or pastels. The trick is to use broad but light strokes while rubbing across the paper. The raised lines beneath the paper catch onto the pastel or crayon to reveal the rubbing plate design below.

Rubbing plates are a great medium to assist the visually impaired. Children can explore the textures with their fingertips before making a rubbing to take home to parents.

Children with limited mobility can create rubbings with accommodations.

Rub across the entire rubbing plate for an artistic animal design or rub only across certain areas to reveal textured backgrounds. Hint: Flip the rubbing plate over so that the inverted side is facing up. Rub over this alternative area for a unique texture.

## CURRICULUM CONNECTIONS

- Enhance fine motor skills
- Create fine art prints and rubbings to use in various art activities
- Explore a range of animal textures
- Develop descriptive vocabulary
- Learn about animal attributes
- Combine colors and experiment with rubbings on a variety of media

Use rubbings as line art images! Lightly rub across rubbing plates with a lighter color such as yellow or orange. The resulting print will act as an outline for the illustration. Encourage children to think about the animals featured in their rubbings. Which colors represent these animals best? A zebra, for instance, has black and white stripes all over its body. An elephant's body is grey. A fish can be bright and shimmery or one simple color like brown to blend in with its surroundings. Help children determine the correct colors for each of the animals from book references and internet photos.

Notice which textures appear from the animal plates while rubbing onto paper! Each of the animals is represented with a specific outer body layer. The outer layer of an animal's body is

important because it protects the body in various ways from the environment. This outer layer is called a covering. Animals can have one of 4 different types of coverings: fur, scales, feathers and shells!

What types of animals have fur? Animals like cats, dogs, monkeys, deer and seals have fur! Fur is a type of synonym for hair because both hair and fur are both made of **keratin**. Keratin is a type of protein that forms our hair, nails, animal hooves, claws and horns. Even if there is very little hair or fur on a body, it is still considered a fur/hair covering. As a result, elephants also have fur coverings!

Scales are the next type of important animal covering. What types of animals have scales? If your students answered "fish" then they're correct! However, ask your students to brainstorm what other types of animals have scale coverings. Reptiles such as lizards, snakes and crocodiles, frogs and insects have scales on their bodies. Scales are a series of tough plates that grow from an animal's body. There are many different types of scales that have different chemical compositions, which means that they are made of different materials. Some scales are derived from the keratin that humans and mammals have on their bodies. Other types of scales are specially designed to allow air or water to pass around an animal without resistance. And yet others are designed be as tough as diamonds!

Feathers are the third type of animal covering. Feathers are well-known for existing on one type of animal: Birds. Feathers are made from an incredible and evolutionary lightweight type of keratin. This keratin is not only lightweight but can insulate heat from cold and is waterproof and extremely durable. Some types of birds are flightless. These birds have softer types of keratin proteins within their feathers. These protein strands focus primarily on keeping the body warm. However, birds that fly have a different alignment of keratin proteins. The protein strands are stronger, allowing the birds to control their direction of flight.

The last type of important animal covering are shells or **exoskeletons**. Exoskeletons are "outside skeletons." Imagine if our skeletons were walking around with only our organs intact inside and no skin, fur or feathers to cover it all with! This is exactly the arrangement that animals such as insects, crustaceans and molluscs have. Shells are made from a type of material that is similar to keratin, but distinct from it at the same time. This material is called **chitin**. It is a special hard coating that keeps the internal organs protected, and when combined with a different type of material called calcium carbonate, chitin can be especially tough to break through. Chitin is found in the shells of crustaceans such as lobsters, and is also found in the bodies of insects.

Animals have many different kinds of appearances among these kinds of coverings. Some animals have spots or stripes while others have single or multicolors. Animals are so diverse in their appearances that it's often hard to keep track of them all!



Our animal rubbing plates are specially designed to reveal basic textures of the animal world to early learners. Talk about each of the textures before you start. Children will love feeling over the grooves of each animal rubbing plate. Ask them to close their eyes as they rub their fingers across the grooves and encourage them to determine what each texture feels like. No description is ever incorrect!

Once they have rubbed their designs onto paper, use the resulting line art as guidelines for coloring the artwork.

Make animal scene plaques with air drying clay. Flip the plate over and use the back side as a mold. Be sure to press air drying clay into every part of the mold including all of the corners and creases of the image. Fill the mold evenly to the top edge to make the plaques. Smooth out the edge with the edge of a ruler. Leave to dry completely.

Once dry, gently twist the edges of the rubbing plate to loosen the air drying clay plaque from the plastic. Tip: If the plaque is a little bit difficult to remove from the rubbing plate, slide a small flat-headed tool such as a paint scraper or plastic **Roylco R5725 Goo Spreader** into a loose corner between the air drying clay mold and the rubbing plate. Maneuver the tool to slowly lift the mold out of the rubbing plate.

Turn the mold over and apply paint to the image. Carefully color parts of the image in layers. Start with lighter colors such as orange, yellow, grey, white, light blue or pink. Let dry, then apply a second coat of paint for the darker colors, such as blue, green and black. Layering light colors under dark colors will ensure less mistakes, and less chance of mixing colors when painting.

Alternatively, press the raised side of the animal rubbing plate onto a square slab of clay, about 1/4" (0.5 cm) thick. Leave to dry overnight so that the clay bonds harden. Bake the plaques. Use acrylic paint to decorate and color the printed impression. Brush a layer of glaze over top to give the impression a clean, finished look.

Explore facts about animals while designing artwork! Discuss the relationship between the animals and their environments while children work on their projects.

Before students start their illustrations, encourage them to press, rub and slide their fingers over the raised plastic details to feel the textures. Ask them to describe what they feel. Teach students about the part of speech that identify these descriptive words. Descriptive words are adjectives and are used to describe nouns (places, people or things). Introduce new vocabulary words or coach children to come up with their own. Let them explain their reasons for choosing certain words. We've included a brief list of several texture-rich words to use when describing each featured rubbing plate animal.

**Bird:** Birds are flying animals. They have 2 wings and 2 standing legs with claws at the ends of their feet. Birds also have beaks or bills that come in various shapes and sizes. Their bodies are completely covered in feathers. Feathers are lightweight but durable coverings that act as thermal insulators and assists birds in flying. All birds lay eggs that hatch after a period of **incubation**. When a bird incubates its eggs, it sits on the eggs to keep them warm. After a length of time, the little birds inside the egg begin to hatch. Birds can be both carnivorous or herbivorous, meaning that they



can eat both meat or plant products such as berries and nectar.

The bird rubbing plate is signified by fine lines that represent feathers. The feathers on its wings are different than the feathers on its body and head. Remember, this is because the feathers on its wings must be strong enough to allow the bird to fly! Therefore, they are not only thicker and more prominent, but also fan out more to control air currents better.

Some adjectives that can be used to describe the birds' feathers are smooth, veiny, rippled, fluffy and spiky.

**Butterfly:** Butterflies are part of a group of insects called **lepidoptera**, which include moths. Butterflies and moths are similar to each other because they both have large wings that are covered in bright colors, and their life cycle is

**holometabolous**, meaning they go through a process of transformation or **metamorphosis**. Butterflies all start out as larvae that grow to become caterpillars. The caterpillar spends most of its life feeding on plant leaves to gain body fat. Once it has fully matured, the caterpillar encases itself in a **chrysalis**. The chrysalis is the hard skin that the caterpillar produces to protect itself as it matures into a imago or an adult butterfly. The adult butterfly lives for only a short time to suck nectar from flowers and to reproduce.

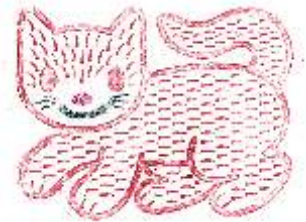
The butterfly rubbing plate is highlighted by the variety of spots on its wings. It also has a series of lines going down its abdomen.

Some adjectives to use to describe the butterfly are ribbed, swirly, spotty and bubbly.

**Cat:** Cats form a large group of animals that are either **domesticated** through generations to live alongside humans or are wild big cats that cannot be tamed. All cats are carnivorous and hunt for food. Even domesticated cats can be observed to exercise their hunting instincts in their natural habitats. Domesticated cats are one of the most popular pets for humans, next to dogs. Cats have protractable claws, which means that when resting, their claws are covered by skin and fur to protect them from wear and tear. But when needed, the skin and fur pull back to reveal their claws. Cats are highly sensitive creatures that can see 6 times better and hear 3-4 times better than humans! Cats are naturally nocturnal creatures which helps them develop these senses better.

The cat rubbing plate is shown with a large area of fur covering its body. A cat's fur and whiskers are its primary means of sensory awareness. Slight changes in air temperature and pressure allow a cat to detect the layout of its environment as well as track down any potential prey.

Some adjectives to use to describe the cat are furry, spiky, bristly or wispy.





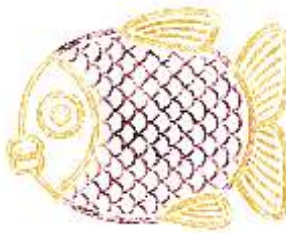
**Elephant:** Elephants are the largest land animal, spanning a 13 foot (4 m) shoulder height and weighing over 20,000 pounds (11,000 kg). Elephants are the descendants of mammoths and other large **pachydermas** (meaning “thick-skinned animals”) that lived during and before the last Ice Age. There are currently only 3 elephant species still living on Earth, and all are in danger of becoming extinct due to poaching and habitat destruction by humans. Elephants are famous for their trunks, which are in fact extended noses that can be used for socializing, drinking water and reaching the tops of trees to feed on leaves. Elephant tusks, however, are the reason why many elephants are poached. The ivory that makes up a tusk is soft and can be carved into a variety of sculptures. All elephants are herbivorous, but the dominant female leader (or **matriarch** of every herd) will not hesitate to attack and kill any creature that threatens their young ones.



The elephant rubbing plate emphasizes the tough layer of skin that elephants are known for. The layer of skin can sometimes reach up to 1” (2.5 cm) thick!

Adjectives to use to describe the elephant are wrinkly, wavy, swirly, smooth and ridged.

**Fish:** Fish are vertebrates that live and breathe in water. They all have a system of special filaments in their gills that filter out oxygen from the water they breathe in. The oxygen molecules then get passed through to little **capillaries** in the filaments. These capillaries are special kinds of blood vessels that absorb and transfer important nutrients to the rest of the body. Fish come in all shapes, colors and sizes and can be carnivorous or herbivorous. Almost all fish lay eggs. Fish are cold-blooded which means their body temperature can change to suit almost any type of environment they are in. However, some fish are adapted to exclusively live in various environments. Saltwater fish, for instance, cannot survive in freshwater and vice versa as they are not specifically adapted to that environment.



The fish rubbing plate features several important parts to it. There are two different textures—its scales and fins. Scales help protect the fish’s body. Fins help propel the fish forward through the water. There are different kinds of fin shapes to allow for that fish’s particular way of swimming. Sharper fin shapes help fish to swim faster while wider fin shapes help the fish to take its time.

Some adjectives to use to describe the fish are scaly, smooth, veiny, bubbly and circular.

**Zebra:** Zebras are recognizable for their distinct black and white stripes. Every pattern of stripes is unique to every zebra, which makes the stripes an animal version of our fingerprints! Zebras are of the same animal classification family as horses, however they resemble mules more closely. Zebras are only found in Africa. They are herbivorous grazing creatures. They have powerful legs that allow them to



outrun a predator and have larger ears and eyes than other types of horses. These larger features help them to hear and see better than most land herbivores.

The zebra rubbing plate features the recognizable stripes of the zebra. The texture of the stripes are bold and ridged. As children feel through the stripes, ask them why they think the zebra has stripes. Discuss the existing theories with your students. Which one makes more sense? Some scientists suggest that the stripes act as a confusing illusion for predators with poor daylight eyesight. Other theories say that the black stripes absorb more heat while the white stripes reflect off heat, therefore this keeps the zebra’s body temperature regulated.

Use adjectives such as bold, striped, ridged and corrugated to describe the zebra’s stripes.

Choose a specific texture from one of the six animal rubbing plates, such as the fish scales. Place a sheet of paper over the rubbing plate, and rub that texture with crayon or pastel. Once the texture shows through, slide the paper slightly to the side so that the initial rubbing aligns with the next rubbing. Tip: Use texture rubbings to decorate cards, bookmarks and gift wrap.

Draw an outline for an animal, person, building or thing on a sheet of paper. Darken the outline with black marker. Choose a texture from one of the animal rubbing plates to fill in the blank areas of the drawing. Place the sheet of paper over top of the rubbing plate. Align the blank coloring areas of the drawing with the texture underneath, then rub lightly with crayon or pastel. Alternate a different pattern and a different color for another part of the drawing until the entire artwork is filled with colorful texture! Alternatively, rub designs onto colored paper. cut the paper into different shapes. Arrange and glue down the shapes to create abstract art.

Make white suncatchers! Fill the rubbing plate to the top edge with glue and a bit of tempera color. For a stronger color, mix in more paint. Swirl the color around the glue to give the suncatcher an interesting look. Let dry overnight. Once dry, twist the sides of the rubbing plate to peel off the suncatcher. Punch a hole in the top of the suncatcher. Thread some string through the hole and hang!