



In the Tracks of Bears

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Literature used:

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Dear teachers and pupils,

Welcome to the teachers' manual, "**In the Tracks of Bears**". It should serve not only as a source of information, but also in capturing the interest of pupils in nature and their surroundings. The varied activities can be used to supplement or enrich lessons, thereby teaching creative thought, opening discussion and leading to knowledge about and acceptance of these animals.

This material arose with the support of the WWF and WSPA as part of **The BEARS Project**, the aim of which is to educate and raise the awareness of the public about bears in Slovakia, as well as to solve specific bear-human conflicts. We formed the project on the basis of research on the knowledge of and attitudes toward predators of Slovak citizens. Opinions are often influenced by the attitude of the majority and facts are distorted. In this way we are trying to reduce the gap between the knowledge of experts and what the public knows. Knowledge of bears, their way of life and needs is fundamental to solving current conflicts between these animals and tourists, shepherds or cottage owners. You can find more information about bears as well as about The BEARS Project on the project's website:

www.medvede.sk

Although at the present time bears in Slovakia are not in such a critical state as in some other European countries, where they were mostly eradicated, they are threatened by other factors: tourist development and ever-increasing intrusions into their environment. To prevent them from becoming unwanted means protecting them from the need to shoot, which requires an informed and responsible approach from all of us that live in or visit areas near them. Conserving this magnificent inhabitant of our mountains as an integral part of our nature and culture depends on us.

Svetlana Beťková

SWS - Slovak Wildlife Society

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Methodological suggestions for teachers

This source of materials can be used for adding to pupils' knowledge in natural history, biology, ethics or aesthetics lessons as well as outside them. Cooperation between teachers of these subjects is good if they decide to work with a class on a project. Chapters (or activities) can also be used separately, for supplementing or enlivening lessons, according to the interest and ability of pupils aged 8 to 16 years. Time limits for exercises and activities are optional.

- I.** Work in groups: “zoologists” divide up the different bear species (cut them out) and describe them to “reporters”, who listen and complete the table. Each group then gets the whole article and reads it through. They identify the bears, colour them and complete the crossword. The first group to finish draws the constellation on the board. A discussion of the causes of threats to bears worldwide can follow.
- II.** Groups or pairs (older ones also individually) complete the exercises according to the text. A map of Slovakia might be needed to work out bear occurrence. What they learn will be used in preparation for the interview with a bear. One pupil or more (a bear family) is/are chosen to answer questions from the others, “journalists”. The word search and putting bear foods in categories can be time-limited (e.g. which group finds the most in 3 min.) and checked together as a class. They can compete in groups to create the most original (and funny) menu. The prize for the winner is the picture of “A Bear in Paradise”.
- III.** The article is quite long, so can be divided into sections by groups. Each informs the others which period they “live” in and what is characteristic for bears. Pupils can answer questions individually as well as illustrating the future for bears with a drawing (on a separate, larger piece of paper) or story. The results should be checked and marked collectively at the end.
- IV.** Can be in test form: pupils should see (or hear) only the first part, the statements. Each writes down what is true and what is not. Then the teacher reads just the marks. Only later the pupils get the second part and match the answers (also in groups). Each chooses a situation and draws it on paper (or the board) as a sign; an alternative is to enact it as a mime and the others try to guess what scene is being shown.
- V.** At the beginning one pupil (or all individually) reads the article. They do the first task separately; marking is collective. Pupils then divide into groups (by drawing lots), prepare their arguments and elect a spokesperson. A time limit (e.g. 5 min.) for each group's contribution and rules (who wants to talk should raise a hand etc.) are set. It is good if someone (a teacher) coordinates the discussion. At the end an agreement should be reached and common measures and compromises written (on a poster). The next task, to describe the picture, is individual work and leads the pupil to empathy.
- VI.** Finding the names of the animals and putting them to the pictures is fairly simple (individual work). Identifying tracks and signs in nature is better for work with the whole class or groups. More explanation is possible; space should be left for pupils' imagination. Pupils can cut out tracks and lay them around the classroom. One group thinks up a situation and relations between particular animals. The others track them and guess what the animals did. Everyone can draw round the big bear prints (e.g. using a stencil) and compare them with the outline of their own hands (feet) – it's fun for pupils and they notice similarities.
- VII.** The cut up story is divided out among groups. Each one has the task of identifying and illustrating the given month or season and on a collective sheet of paper (can be stuck on) the class makes a “bear calendar”. You can also draw the food that bears eat in each period. Alternatively, each pupil (group) chooses one extract and first illustrates it. Pupils then choose the best drawings, stick them on a collective piece of paper and write on the months.
- VIII.** Pupils can also play the game outside class; just the aids, quiz questions (cut out), rules and marking need to be prepared for separate groups.
- IX.** The quiz is not just part of the game, it can also be used as a quiz or test in class.

I. What kinds of bears live in the world?

If we include the giant panda, as do many zoologists, there are eight species of bear living on Earth today.

Brown bear (*Ursus arctos*)

This is the most widespread species, which we can meet also in Slovakia. Its sub-species include the *North American, East Asian, Tibetan, Euro-Siberian, Alaskan* and *Middle Eastern*.

The largest of them is the *Kodiak* bear (length 2.0-3.4 metres; weight 470-530 kg). It lives on the shore and islands of Alaska and is named after one of them.

Another sub-species is the famous *grizzly* from North America. It also grows to respectable proportions, up to about two metres in length. Its long brown fur is light at the tips, giving it its name ("grizzled" means grey). Like the Kodiak, in autumn it also loves to hunt salmon moving in mass migrations against the river current.

Black bear (*Ursus americanus*)

The black bear lives in Mexico, the USA and Canada, where it forms numerous populations, including some in areas where the grizzly never lived. It is almost as large as the European brown bear, but has shorter, black (or brown) fur, light on the chest. It does not have a pronounced shoulder hump, which is the simplest way to distinguish it from the grizzly living in the same regions. It climbs trees very well.

Asiatic black bear (*Ursus thibetanus*)

This bear lives in Asia, up to 4,000 metres above sea level in the Himalayas.

It is smaller than the American black bear, is also black, but has a yellowy-white collar on the chest in the shape of the letter V.

Polar bear (*Ursus maritimus*)

Polar bears live in the Arctic, around the shores of the northern Arctic Ocean (not in Antarctica). In contrast to other species of bear it eats mostly animals; those available in such areas are seals, walruses, sea birds, fish, including carcasses. During the short Arctic summer these are supplemented by berries, seaweed and grass.

The polar bear is the largest species overall. Males weigh 350-650 kg, females up to 250 kg; their height is 1.5 m and length 2.4-2.7 m.

It is superbly adapted for a cold climate. Subcutaneous fat and long hollow fur isolate it and help it to absorb as much warmth as possible from the sun. On its paws, on the underside and covered by fur, it has pads and hollows, which allow it to grip ice better. Its body is elongated, adapted for swimming, and it has small ears and digits connected for half their length by webbing.

* Although it is protected, poachers hunt it. Its population is gravely threatened by atmospheric pollution and global warming.

Spectacled bear (*Tremarctos ornatus*)

This is the only species of bear living in South America, where it inhabits the Andes Mountains. It is black-brown in colour; it has light fur around the eyes resembling spectacles. On the chest it has a collar of longer, also light-coloured, fur. It readily climbs cacti to get fruit.

* It is threatened by hunting for its meat and the destruction of its habitat. Farmers shoot it due to damage to crops.

Giant panda (*Ailuropoda melanoleuca*)

The giant panda lives in southeast China. Its diet is up to 99% vegetarian: bamboo shoots and leaves, of which an adult panda needs as much as 14 kg daily. That's why they feed for 12 hours every day.

* Even though this species, with its beautiful black and white coat, is fully protected, it is threatened by poaching and the felling of primeval bamboo forests. The global population is estimated at just 700 individuals living in the wild. They don't breed well in captivity. Their conservation is being attended to by WWF – the World Wide Fund for Nature, which has the panda as its symbol.

Sun bear (*Helarctos malayanus*)

This bear occurs in southeast Asia, on the Malaysian peninsular, in southern China and on the islands of Sumatra and Kalimantan. It is the smallest of all bear species, weighing only about 65 kg.

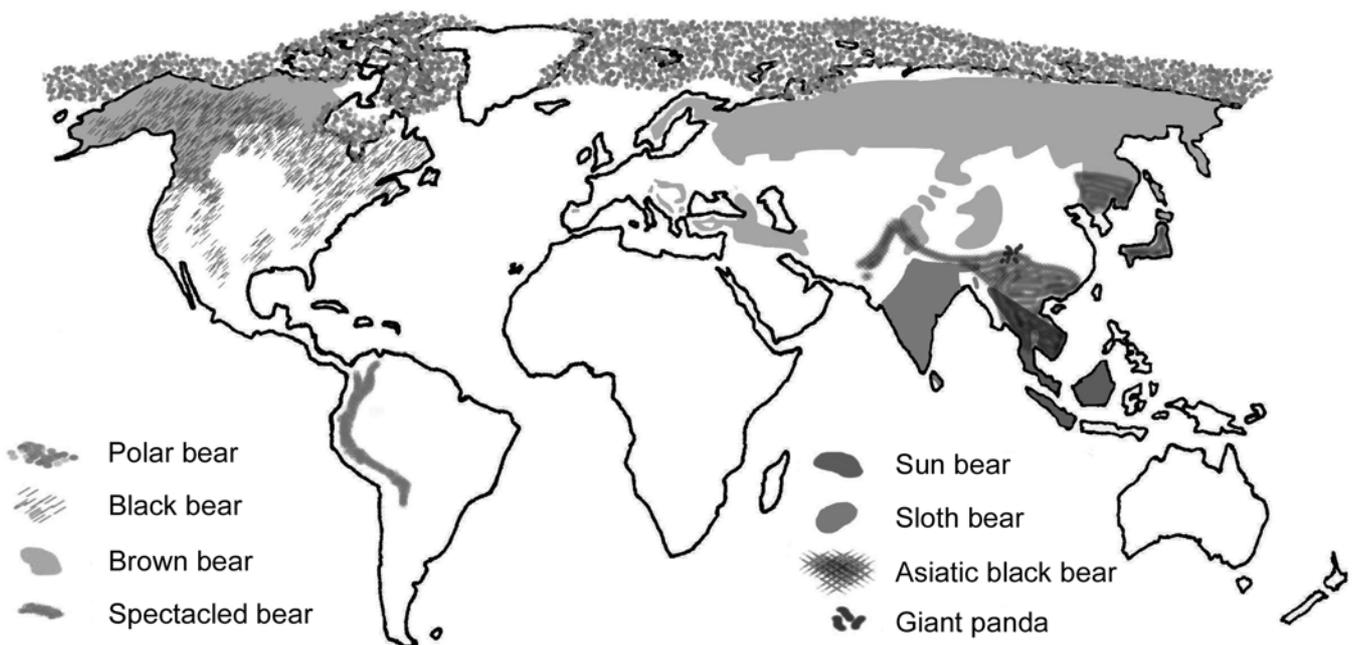
It lives in regions of tropical primeval forests and therefore has the shortest fur of any bear. Thanks to long claws it climbs trees very well. It catches termites, bees and other insects with its narrow, long tongue but it also lives on fruit and small mammals.

* Poachers still hunt it for its gall bladder, highly valued in the Far East where it is used to make traditional medicines. It is also hunted because of its paws, an expensive but popular delicacy in luxury restaurants. At present it is also threatened by the felling of tropical rainforests.

Sloth bear (*Melursus ursinus*)

The sloth bear lives in India and Sri Lanka. It has an extended facial section of the skull, an overhanging lower lip, long claws and a long tongue that allow it to search for termites and other insects in wood.

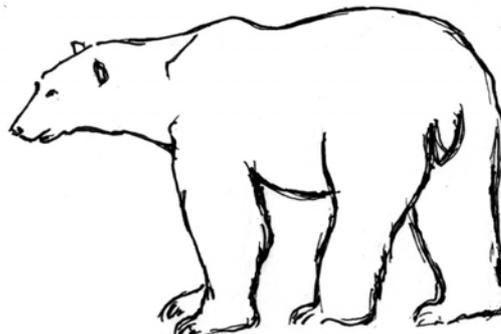
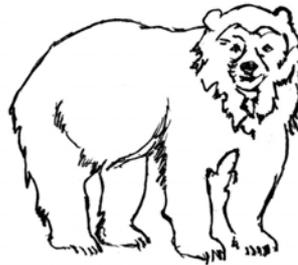
* It is still used for entertainment as a "dancing bear". There are efforts to save this species in reserves and national parks.



I.1. Enter the missing information in the table:

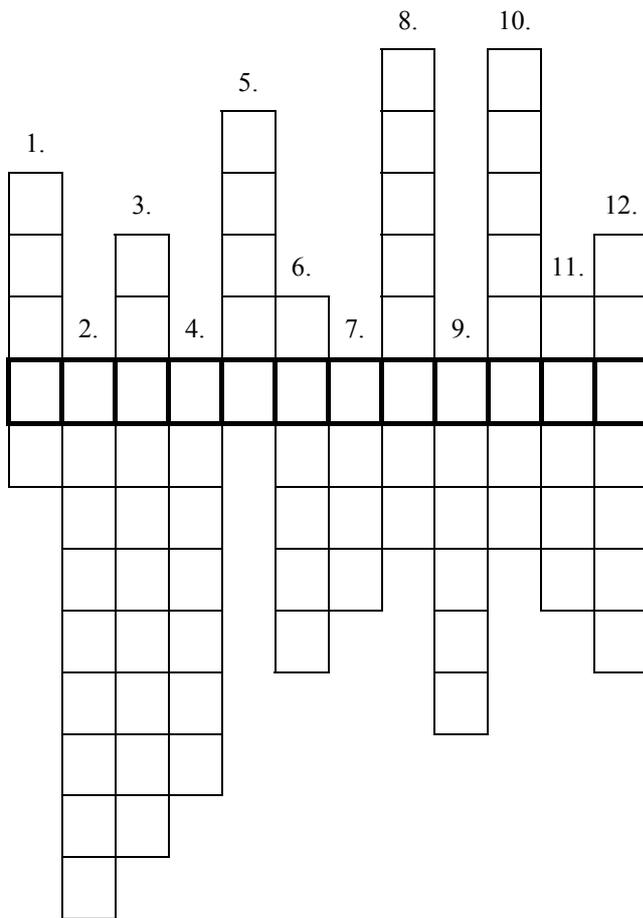
Species name	Occurrence	Food	Specific signs/causes of threat
			<i>gall bladder – used in healing</i>
	<i>Arctic</i>		
			<i>long fur sometimes light at tip</i>
		<i>termites, insects</i>	
			<i>destruction of bamboo forest</i>
			<i>doesn't have a shoulder "hump"</i>
	<i>Himalayas</i>		
		<i>cactus fruits</i>	

I.2. Colour the pictures. Name which bears they show.



I.3. Do you know what URSA MAJOR means?

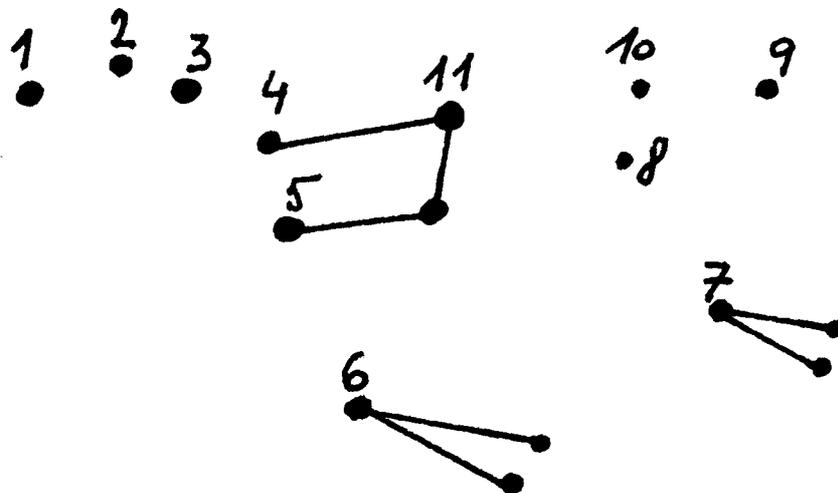
You can find the answer in the crossword.



1. Which pole does the polar bear live at?
2. The name of the world's highest mountain range.
3. What the pattern around the eyes of South America's only species of bear looks like.
4. The legendary bear of the Rocky Mountains in North America.
5. Which bear is the best swimmer?
6. A country where black bears live, besides Canada and the USA.
7. On which continent do the sloth bear and sun bear live?
8. Insects, similar to ants but they live in wood.
9. The plant that pandas live on.
10. Illegal hunters, threaten many species of animals.
11. A black and white bear that in the wild lives only in China.
12. One of the biggest current threats to the polar bear is global _____ .

I.4. Draw the star constellation (join the dots). Do you know what it's called?

Try to find it in the night sky. The beginning forms the well-known Plough.



II. Who is *Ursus arctos*?

A description of the brown bear

II.1.a) Complete the text with the following words:

hibernation, predator, milk, natural, plants, March, Ursidae, weight, solitary, November, omnivore, loses, injured, body temperature, 10-year-olds

Bears belong to the large family called , meaning bear in Latin. The name *Ursus arctos*, brown bear, also comes from this. Its first ancestors lived on Earth 20-30 million years ago, long before Man. Bones in caves show that it lived throughout Slovakia.

The bear is a carnivore, a , so it eats other animals. However, it is not a very good hunter. It has gradually become adapted as an , (its teeth are different from meat-eaters). Its diet depends on the environment in which it lives, up to 90% comes from Bears look for food mainly in the evening and early morning. Autumn is an important period, when they eat a lot in order to form enough fat reserves for the winter.

In the wild a bear can live for 25-30 years. Its life is mostly , only the female lives together with her young. Male brown bears in Slovakia reach a of 140-320 kg, females 100-200 kg. Height at the “withers” (shoulder) can be 90-130 cm when it is standing on all four feet.

The bear’s senses are admirably well developed. Best of all is its sense of smell. The surface area of the mucous membrane is 100 times bigger than a human’s and the snout is moveable. The ears can also be turned towards the direction sounds come from. Its eyesight is weaker than its other senses, but is still about the same as a human’s.

During the winter the bear settles down to a “winter sleep”, which is called Its lowers, its heart beat and bodily functions slow. It doesn’t eat any food. This “rest” is essential for bears during a period of food shortage. At this time of year the young are born. Bears mostly stay in their dens from to , depending on food availability, weather and the individual bear. Females with cubs stay in their dens the longest.

She-bears have young, most often two, every second or third year, which weigh only about 400 g at birth (they are the size of guinea pigs). They start to see after four weeks. Their mother’s is very nutritious – it is up to 20% fat (human milk is less than 4%). While feeding her cubs in the den a female bear up to 40% of her weight. Young stay with their mother 2-3 years. They grow to about half the size of their parents in the first year but don’t reach full size until they are



Even though the bear is Europe’s largest carnivore, it has several enemies, especially hunger, accidents, disease and parasites. Sometimes its death is caused by other bears, for example when a dominant male (one that has priority at food and is respected by other bears) kills young. The greatest enemy of the bear, however, is Man. Although most people fear bears, there are no known cases of a bear killing a person in Slovakia in the last 100 years. Each year several people are by them.

II.1.b) Play a journalist, interview a bear.

Divide into two groups: journalists and bears. Journalists try to get as much detail about the lives of different members of a bear family. Bears answer them (from the text or your own imagination).

II.1.c) Which facts about bears do these numbers indicate?

25-30 20,000,000
 140-320 40

II.1.d) Explain the terms:

1. hibernation
2. predator
3. dominant male

II.1.e) Answer the questions and complete the information:

1. List the bear's three main senses, starting with the best:
2. What does the following information describe?
 - move a little, can detect from which direction sounds come:

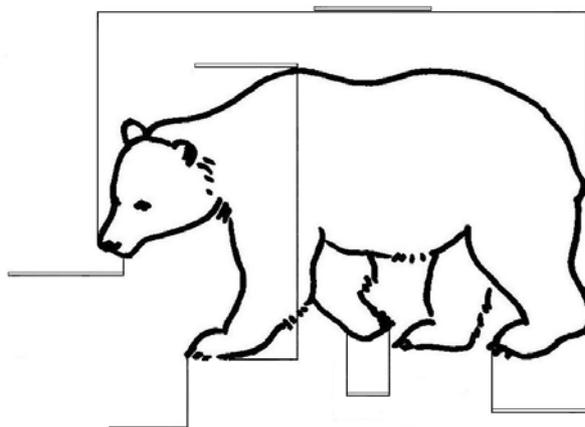
 - the large area of the mucous membrane is about 100 times bigger than a person's:

 - adapted mainly to plant food, unlike specialist meat-eaters:

 - weaker, but at least as good as people's:

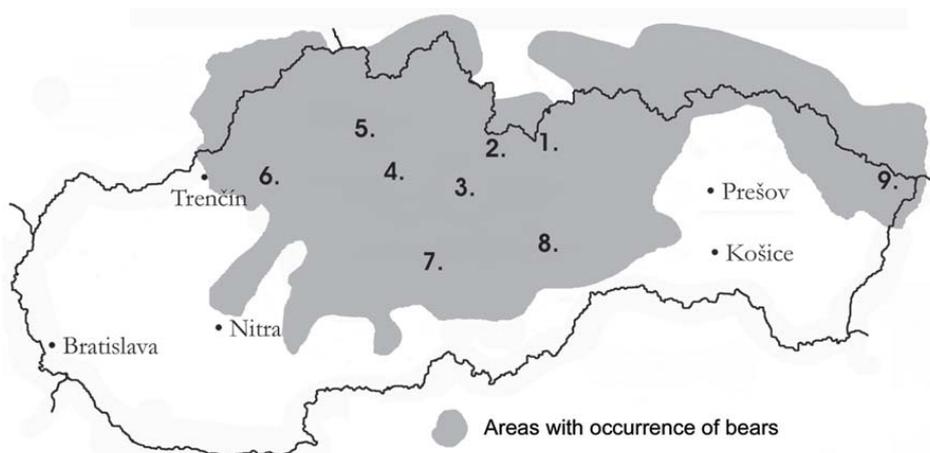
3. Where is the shoulder and what does it determine?

4. Add the labels to the picture: 90-130 cm, 23-28 cm, 170-190 cm, 5-6 cm, 42, 14-18 cm.



Where do bears live in Slovakia?

II.2. From the map, add the right number next to each mountain range:



- Veľká Fatra
- Poľana
- Slovenské Rudohorie
- Vysoké Tatry
- Nízke Tatry
- Východné Karpaty
- Malá Fatra
- Západné Tatry
- Strážovské vrchy

Bear food

II.3.a) Find the bear foods in the word search and put them in the categories where they belong.

T H O N E Y T A E H W
 R O W A N E H S F E A
 E A A R O S E H I P S
 S T N A M T R S S O P
 E S E S I U B N H M S
 E B O P C F S A X U H
 B I L B E R R I E S E
 W R A E N O M L E H E
 O F R R I G O S L R P
 R E V R J S L I P O L
 M H A I S C E T P O U
 S A E E P E Z I A M M
 G R A S S N A K E S S
 D E E R I H T S A M T

* The word search contains 28 hidden items
 (Look forwards and backwards, up and down;
 letters can be common to two or more words.)

1. plants:
2. forest fruits – soft:
3. – hard:
4. insects and other invertebrates:
5. fruit trees:
6. agricultural crops, livestock:
7. weak or dead hoofed animals:
8. small mammals:
9. other animals:

II.3.b) Complete a healthy menu for a bear:

"The Old Grumbler Restaurant"

(open from spring to late autumn)

Menu

~~~~~

vegetarian  
starters

~~~~~

Grumbler's
specialities

~~~~~

desserts

~~~~~

drinks
(non-alcoholic)

~~~~~

**II.3.c)** Colour the picture of “*A Bear in Paradise*”.

Cross out the four things that don't belong there, because they are not natural bear foods.



### III. A brief history of bears

The ancestors of bears lived on Earth before people. By 20 million years ago the first ancient bears appeared, about the size of dogs and with long tails. Later, during the Ice Age 250,000 years ago, cave bears as well as the direct ancestors of brown bears gradually arrived in Europe from Asia. Cave-dwelling bears died out 10,000 years ago, but signs of them remain till this day – bones, teeth and claws. These have been found in caves in Slovakia, too, for example in Demänovská Valley. Prehistoric Man not only hunted bears for meat, but he also utilised their skin and bones – as weapons or tools. He drew animals on the walls of caves and we can see that he had respect for them. These signs were a kind of ceremonial ritual for a successful hunt.



Many primitive tribes in Siberia and in North America showed great respect for the bear. Killing him with spears, arrows or a knife called for considerable skill and bravery. That he could stand on his hind legs, had tracks similar to human ones and had certain characteristics reminded them of a person. They regarded him as a protector. According to some tribes the bear was the ancient ancestor of the human race. They often accorded him a shaman's healing powers. They carried claws or teeth in a protective amulet and as a mark of bravery in battle. They called him their brother and when they had to kill him they first danced a ceremonial dance to ask the spirit of the bear for forgiveness. Canadian Indians portrayed him in their totems as one of the sacred animals.



The symbol of the bear also often appeared in the ceremonies and customs of the Slavs. At carnivals, masks were traditionally prepared and they dressed in bearskins. There were legends and myths of children raised by she-bears as well as many fairy tales. "Bear, give me

your paw” is a well-known song and folk dance. It comes from the time of nomadic gypsies and entertainers, who brought "dancing bears". Folk artists portrayed the bear on functional objects, such as on milk tankards as they could often meet him on the farm. The bear appeared on the crests of the Orava and Spiš districts of the former Hungarian Empire and today can still be seen on the crests of several villages in Slovakia.



In the past bears had plenty of space to live in, but humans gradually cut down forests, changed them into fields and pastures and settled the land. In this way bears and people came into conflict more often. Bears attacked livestock and visited beehives or fields with crops. They were no longer hunted only by the nobility for sport, but were also persecuted by peasants as vermin. Various methods were used for killing: catching in pits, enclosures, traps and at baits. In the 18<sup>th</sup> Century a reward of seven gold pieces was paid for killing a bear. People used the bear’s meat (the paws were a delicacy) and skin; the gall bladder was highly valued in folk medicine. The number of bears fell sharply and before the Second World War there were only a few dozen left in Slovakia.

In 1932 people realised that the bear was gravely endangered. Year-round protection was declared by law. Gradually bears spread back, at least into some parts of their former home: the forests of northern and central Slovakia, where they still exist today.



Because bears live secretive lives in large areas that are not easily accessible, it is difficult to determine their exact number. Experts estimate that 600-800 individuals live in Slovakia at present. The bear is protected all year round, but the ministry issues several dozen exceptions for shooting each year. A hunted bear must have a weight less than 100 kg, exceptionally 150 kg, in order to conserve larger dominant males, which are thought to play an important role in regulating the population. Exceptions can also be requested in cases of substantial damage caused by bears or if there is danger to human life.

The bear is threatened in modern times not only by poaching but also by people moving further and further into his territory. The building of roads and recreation centres fragments and reduces the habitat for bears. Excessive collection of forest fruit causes an insufficiency of natural food, mainly in the autumn, when bears are laying down fat reserves for the winter. The large number of hikers, mushroom and fruit pickers is a constant disturbance to the bear.

The bear living in this country is a great rarity in Europe, where it has already disappeared from many states. For this majestic animal of our forests to survive in his natural environment for future generations, cooperation is needed among conservationists, National Park staff and hunters but also the public – all those who visit and love our mountains.



**III.1.** Answer these questions:

1. When did the first ancestors of the brown bear live in Europe?

.....

2. Compare reasons why people hunted bears in the 18<sup>th</sup> Century and why they do today.

.....

.....

3. What relationship to the bear did Indians have and do people in your area have?

.....

.....

4. In what ways was the method of hunting in the past different from that of today, and which is a greater danger for the bear?

.....

.....

.....

5. When was the bear most endangered in Slovakia and why?

.....

6. What is currently a great threat to bears in our mountains?

.....

.....

7. How could you help the bear?

.....

.....

8. Do you know a nursery rhyme or story about a bear? How is his character described in it? Is it accurate?

.....

.....

.....

**III.2.** In your opinion, what will the future look like for bears in our country?

Draw a picture or write a short story.



## IV. Myth or reality?

We hear a lot about bears from various sources: nursery rhymes, television, foresters, hikers, shepherds, or weekenders. People spread a lot of information without checking if it's true.

**IV.1.** Decide which of these ten statements are true and which just superstition:

1. "After winter bears are hungry and so are agitated and more dangerous for people."
2. "When a bear stands on its hind legs it's getting ready to attack."
3. "If a bear is coming towards me, it's good to run downhill, because bears can't run so well downhill."
4. "A female with young may attack a person."
5. "If I see a bear near a hotel or cottage, it's hungry and I can help him if I give him something to eat."
6. "It's good to talk or sing in the forest, so that bears know about us in advance."
7. "If I have a dog with me it can protect me from bears."
8. "Bear cubs are cute and harmless, I can photograph them or watch them undisturbed."
9. "When several bears gather together in one place, it's proof that there are too many bears in the area."
10. "If a bear attacks and you don't have any chance to escape, you should quickly lie on the ground and play dead."

**IV.2.** Match the answers to the previous statements:

- A. **Not true.** Never run from a bear! It can run equally well uphill and down; over short distances even as fast as a horse. You should try to stay calm, back away slowly, speak to it in a low tone of voice and take a wide detour around it.
- B. **Not true.** While your dog might smell a bear, if he provokes it or seeks protection from you, he can lead it straight to you. So it's not good to take dogs on trips to the mountains and definitely not without a leash.
- C. **Not true.** Bears are hungry almost every day, but you are not helping by feeding them. If a bear gets used to taking food from people, it learns to visit places with people regularly and can become aggressive. Then it will be in danger of being shot.
- D. **Not true.** The bear is using its senses of smell and sight to find out who is there.
- E. **True** – if you get too close. A female bear will try to protect her young, but her attack is often just a bluff by which she wants to chase away an enemy.
- F. **True.** If bears know that you are there, they will usually try to avoid you. But don't make too much noise so that you don't disturb other animals.
- G. **Not true.** Where there are young, their mother will be there, too, so it would be better to go back the way you came.
- H. **True.** You should lie flat on your belly or curl your legs under yourself and protect the back of your neck and head with your hands and arms. If you have a rucksack, it's good to keep it on your back. It's important to keep still. When the bear realises that you are not threatening it, it will usually leave.
- I. **Not true.** Bears in Slovakia don't treat people as their prey. They are dangerous if we surprise them and they feel threatened, when they are protecting their young or if they get used to people and people's food or refuse.
- J. **Not true.** The bears could have come from large distances to a seasonal source of food. Bears have an excellent sense of smell, better than a dog's, and smell food from far away.

**IV.3.** On a separate piece of paper, design a witty and original sign – a simple drawing that conveys what is correct and what should not be done during an encounter with a bear.

## V. How to avoid problems with bears

Bears become a problem if they get used to people, their food or refuse. Such individuals are called human food-conditioned. They occur mostly in recreation areas and around mountain hotels. People carelessly throw away food, especially remains of bread, fish and fruit as well as wrappers from meat or sweet products. Their smell attracts bears. Such refuse and containers represent easily accessible food. If a bear is attracted to them and has no bad experience, it will probably visit more often, get bolder and lose its wariness of people.



Seeing bear cubs feeding near a hotel or cottage might seem like a nice experience, but the future is less optimistic. If, while still young, they learn to look for food at refuse dumps or near human settlements, sooner or later a conflict could occur. Such bears become a danger to people and so are at risk of being shot. Sometimes, to save them, such “container bears” have been moved to far away places, but many find their way back. Others have been put in zoos.

If we spend time in the forest, as tourists or cottage owners, we shouldn't forget that food smells attract bears. It's important to secure food and refuse so that bears can't get to them.



When camping or cooking on a fireplace outside, cleanliness should be maintained. Don't cook or leave food in a tent.

Some bears visit beehives, orchards and fields. Shepherds, beekeepers and farmers therefore do not like them much. Sheep farms are a strong attractant for bears, especially if they're located at the forest edge and are not adequately protected. Livestock lacks natural anti-predator defence reactions and so falls easy prey. Sheep shut in a sheepfold are particularly vulnerable: they can't escape. That's why a bear may sometimes

injure or kill more animals that it can eat. In the past, shepherds used large white dogs to protect flocks; both people and predators were wary of them. We still know them today: the Slovenský čuvač. This breed has innate characteristics that make it a reliable and courageous guardian. How it is raised is important. Pups must grow up with the flock from about eight weeks of age. In this way they form a strong social bond and regard sheep as their family. It's then natural for them as adults to protect their “relations”. In Slovakia, this old tradition has almost been forgotten. Although shepherds have dogs, most of them are chained up, preventing them fulfilling their role as guardians effectively. Electric fences can also be used for protecting flocks as well as beehives, but must be strong and properly installed. Alternatively, beehives can be enclosed in metal cages or raised up on platforms.



**V.1. Join people, activities and preventive measures (there are several options):**

|                |                              |                                      |
|----------------|------------------------------|--------------------------------------|
| shepherds      | cooking on fire              | vigilant, warn of own presence       |
|                | storing food                 | raise good livestock guarding dogs   |
| tourists       | securing refuse              | safely, at marked sites              |
|                | breeding and grazing sheep   | so that animals can't get to it      |
| cottage owners | putting beehives near forest | remove smells and keep clean         |
|                | camping                      | don't bury it, pack up and take away |
| beekeepers     | behaviour in forest          | electric fencing                     |

**V.2. DISCUSSION** *“What we can do to help them live”*

To a great extent preventive measures can stop problems with bears and so protect them from being shot needlessly. The role of conservationists is to persuade the others in the discussion that your view is correct. Prepare arguments why it is essential to conserve bears. The conservationists will negotiate with these groups:

- A) farmers, beekeepers      B) hunters      C) tourists, cottage owners      D) politicians

*Form your group's opinion and think what position to take toward the conservationists:*

- building new facilities and roads for the development of tourism doesn't harm bears
- they are interesting for foreign tourists, because they don't live in their countries
- they cause damage in hunting grounds, mainly to game animals
- they are part of nature, symbols of wild and undisturbed beauty
- preventive measures are expensive and need a lot of time
- they can be dangerous if you meet them close up
- they can break into buildings in search for food
- they come after food close to where people live
- their numbers must be controlled by shooting
- bears can cause a lot of damage
- they aren't afraid of anything
- they're dangerous for people
- there are too many of them

**V.3. Description of the picture:**

Why is this bear in a cage?  
How does he feel and what is he thinking about?



.....

.....

.....

.....

.....

## VI. Animal tracks in the forest

When you are out in nature, look around at your surroundings. You can learn a lot. In winter there are many different tracks in the snow. In other seasons, too, the forest is full of “messages” from animals: you just need to know how to read them.

**VI.1.a)** Can you work out the names of the animals? The letters are jumbled up:

- |                |              |
|----------------|--------------|
| 1. NIPE TREMNA | 6. REAH      |
| 2. ERD XOF     | 7. YERG FLOW |
| 3. THIEW KROST | 8. OROK      |
| 4. DER EDRE    | 9. NYXL      |
| 5. WORN B REAB | 10. ORE REED |

**VI.1.b)** Write the correct names of the animals under the pictures on page 18.

**VI.1.c)** These animals left the prints shown on pages 19 and 20: can you match them up correctly? The prints are shown actual size.

**VI.1.d)** Answer these questions:

1. In what ways are these similar prints different: hare – fox, wolf – lynx? .....
2. Whose tracks can you not usually see in snow in winter and why not? .....
3. Which animals belong among the carnivores? What do their prints have in common? .....

**VI.2.a)** From the graph find out how big the bear was whose prints are on pg.20: ..... kg.

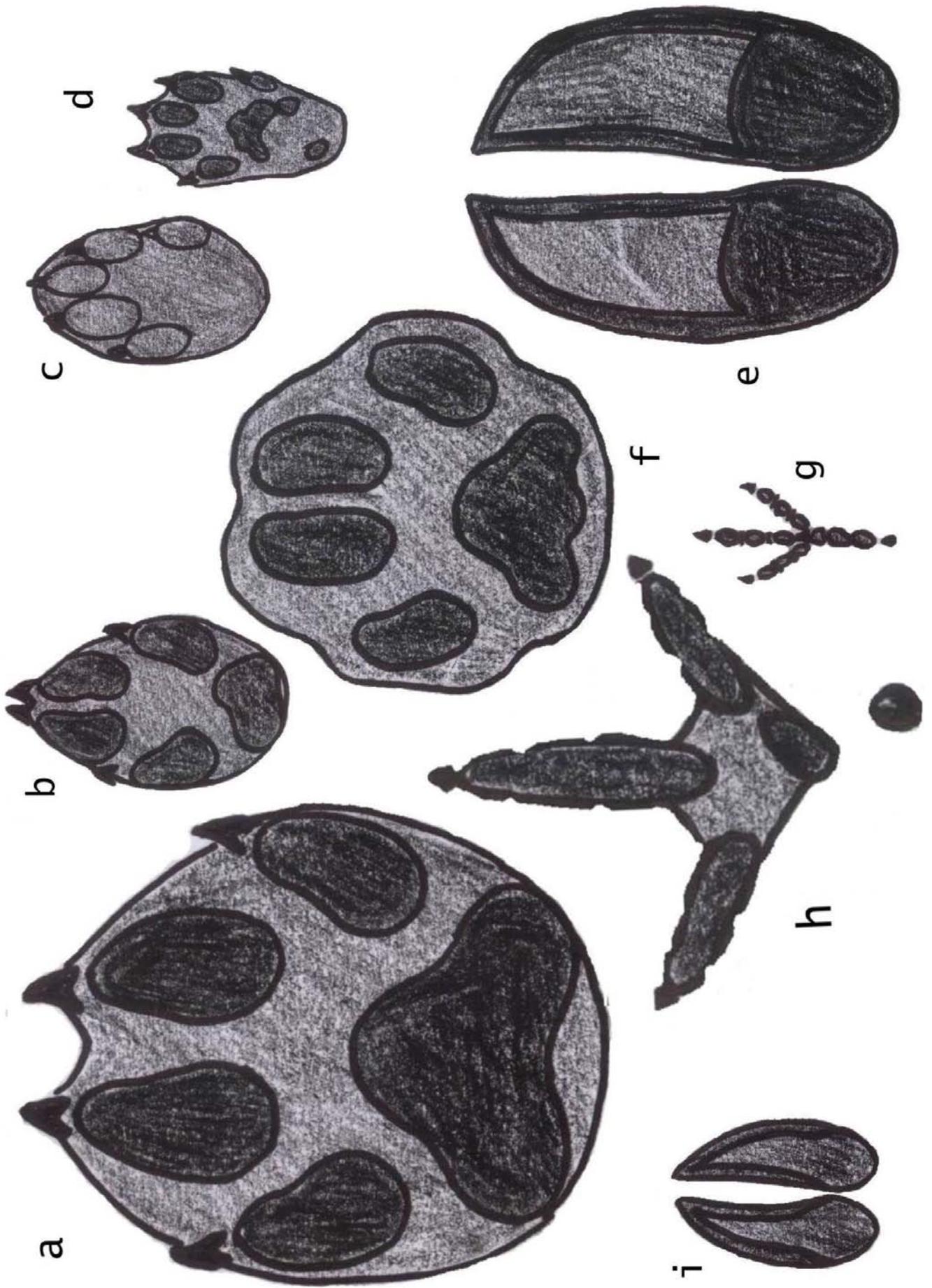
**VI.2.b)** Put your hand on the fore print and your foot on the hind print and draw round them. Compare your prints with those of the bear. How are they similar?

**VI.3.** Play a tracker and try to work out what the bear was doing from the signs:

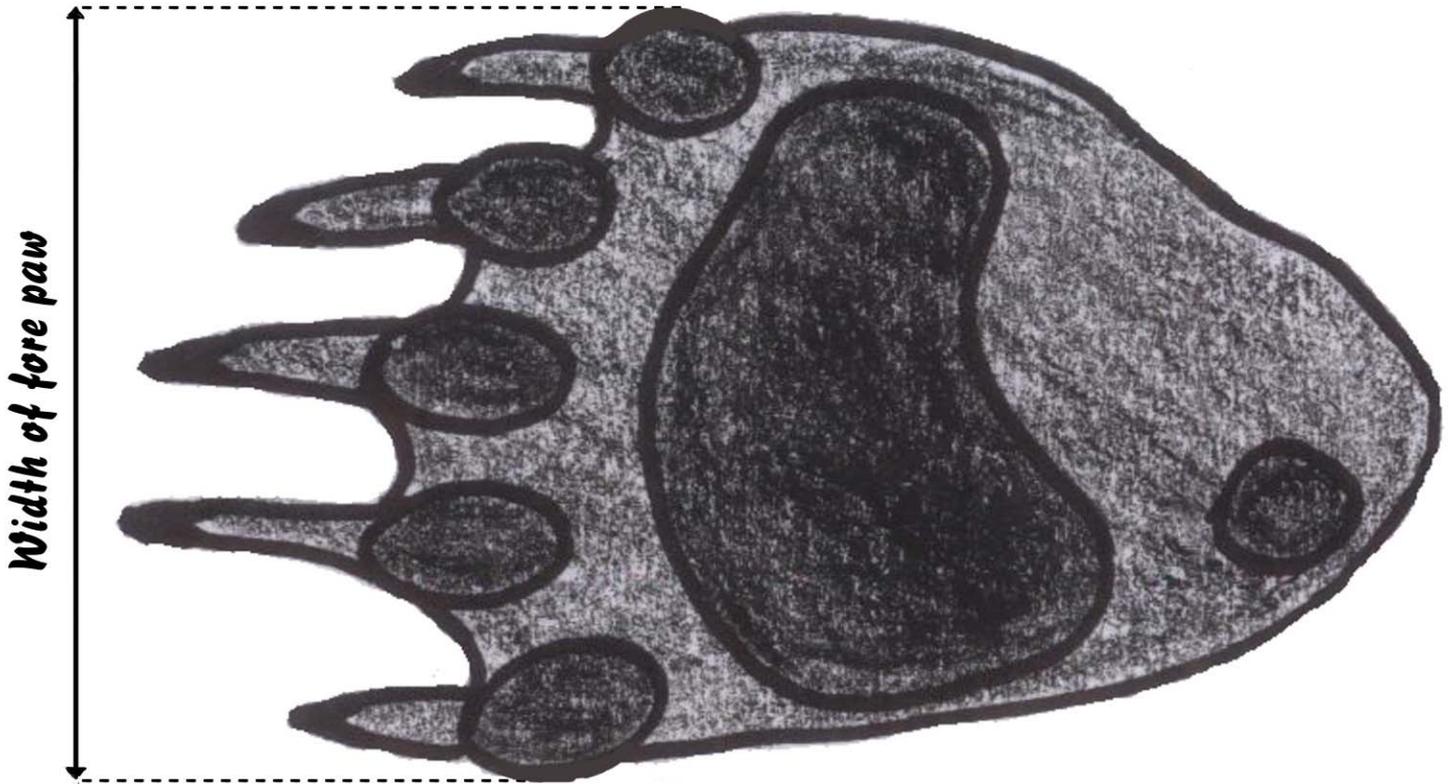
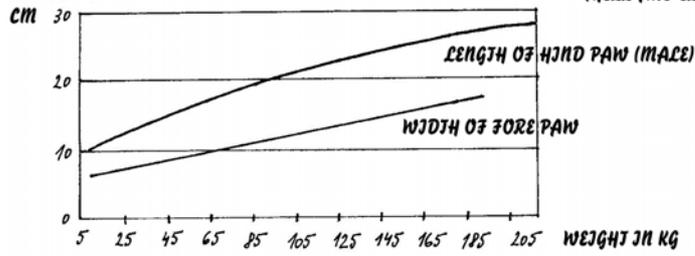
1. Claw scratches and fur stuck on a tree, torn pieces of bark .....
2. Prints in the mud near a stream .....
3. Dug up earth, rocks turned over .....
4. Flattened down grass .....
5. Broken branches on a rowan tree .....
6. Faeces, as big as a cow's but dark, almost black .....



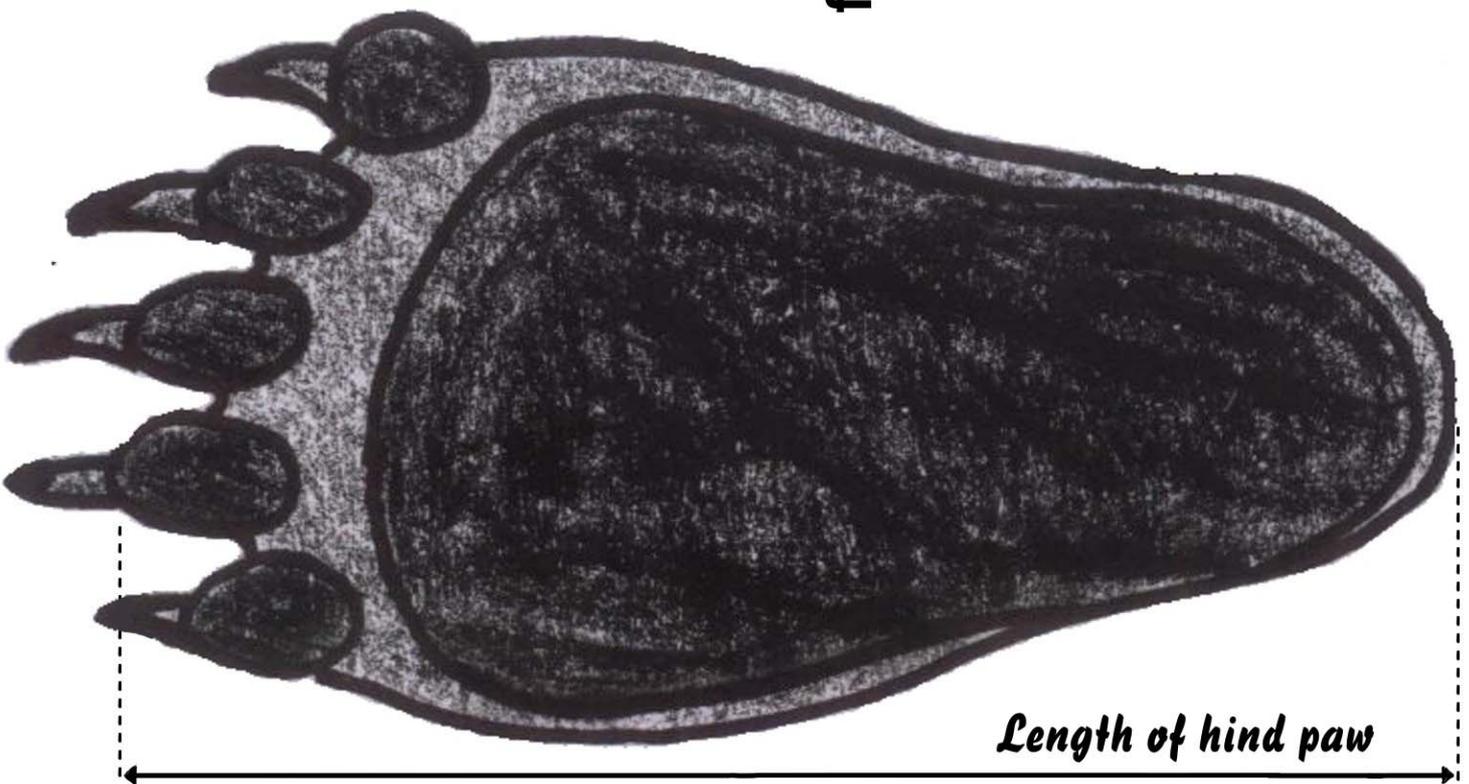




**DETERMINING THE WEIGHT OF BROWN BEARS FROM THE SIZE OF PRINTS**  
 (HELL AND SLADEK 1994)



**f**



## VII. Story “A Bear’s Year”

(Extracts taken from the book: *Predators Looking For Home*, Vladimír Pazourek, 1968.)

Let’s make a **bear calendar**. Cut out the extracts from the book and put them in order by month of the year. Draw what is happening in the life of the bear.

(Not all events necessarily happen only in the particular month or in the given sequence.)

a) month .....

Something inexplicable convinced them both that they were not enemies and did not need to worry about the other’s selfishness. The bear climbed up to the beehive again and the second, undoubtedly a young she-bear, ate the honeycombs that fell to the ground. From that time they became inseparable friends for many days. They travelled together day and night and slept side-by-side, the nose of one resting on the head of the other. They freely shared the food they found, each giving the other more than he kept for himself...

b) month .....

One day white snowflakes began to blow about in the air. They fell to the ground and lay there. The little bear watched the new vagaries of the weather curiously; excitedly he chased the flakes but couldn’t catch a single one, even though they fell very slowly... He settled into an old badger hole that he had worked long and hard to repair and enlarge. A heap of dry grass and a little fur remained in the burrow from the former occupant. The little bear flattened out the bed and lay down. He scratched his throat a few times, stretched his legs then tucked them up and fell asleep...

c) month .....

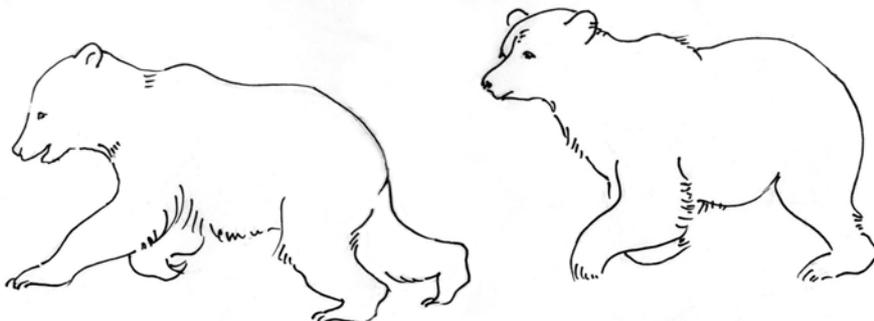
His fur grew slowly and in the first few weeks his size didn’t change much, at least not fast enough for it to be visible. He was blind for four weeks; his eyes did not open until the end of February. He snuggled up to his mother, fed on her milk and slept contentedly near her, almost in her arms...

d) month .....

Something made him want to touch that ball, with its small head and little legs. At the same time something inside him spoke up warningly, making him cautious. Eventually he tapped the animal, which instantly hunched its head in toward its belly... The pain that the spines caused him was unenviable and was like the prickling of a blackberry bush...

e) month .....

Light lured the little bear on. Once he awoke and his open eyes caught the sun’s reflected rays. He stood up and headed towards the irregular rectangular cleft between the walls of rock from which came so much brightness... In front of him was the forest, that strange thing that he had never seen and was yet to know...



**f) month** .....

The cub, already as big as a poodle and adorned with light yellow-brown fur, bushy like a lady's glove, tottered beside his mother, staggered behind her or occasionally even went in front. He lay in the sun on the flat rock before the start of the steep hill and alternated short naps with clumsy walks...

**g) month** .....

That night the she-bear opened her eyes, but because of the dark didn't even see the snow in front of the den. In fact she opened them not out of curiosity but for a quite different reason. Something was happening in her innards, someone there had started to move vigorously and push outwards...

**h) month** .....

When he lay and looked at the yellow fruit, his senses of smell, sight and taste told him they might be good to eat... Apple after apple disappeared down his throat, until he had picked all that hung on the protruding branches. He felt he had eaten his fill, but in him awoke the old bear's craving to eat everything within reach... One particularly fragrant apple led him to a neck-breaking feat: he stood on his back legs and with his front paws reached up into the crown to pick the apple. But as he stretched he lost his balance immediately... He raised his head, looked a little sadly, a little reproachfully, at the place he had fallen from and shook his head. But he didn't just see the branch he had fallen off, but also that apple, shining like a taunting face...

**i) month** .....

Once he woke up and curiously looked about. He was thirsty, so got up and left the den. Outside everything was under snow; it lay on bushes like ruffled covers; tree crowns were garnished all over with gloves of snow and on the trunks gleamed clumps of snow, caught on the bumps in the bark...

**j) month** .....

He was left with the stream as a reliable provider of meat. A young loner, in a pelt that had become grey, thick and long ahead of winter, he went to the ford everyday to hunt. He already knew how to get fish quickly: he went into the water sensibly, with eyes focussed on a spot teeming with fish. He knew how to grab with both paws and from time to time he managed to toss a fish onto the bank...

**k) month** .....

The cub didn't want to climb a tree. He didn't have courage, he was afraid. When he managed to scabble about a metre off the ground, thanks to his mother's constant encouragement and intervention, he spun like a ball and fell to the ground. It was an unpleasant encounter with a place where he had always stood safely on at least two legs, if not all four. Now he had his legs in the air and howled tearfully. His plight didn't move the she-bear: she quieted him a little and again pressed him to the trunk...

**l) month** .....

When his mother stretched out her paw and gave him a handful of big, red berries, he stuffed them straight into his mouth. He knew the taste of raspberries and got quite frantic for them. He forgot how far they had to go, what troubles probably awaited him on the way back! He started to pick raspberries dextrously, smearing his snout and paws with them, the sweet juice sticking around his eyes, gobbling whole piles insatiably, eagerly stuffing them into his mouth and thinking of nothing else...



## VIII. Game “Who’ll get to the den first?”

Play the game and test your knowledge in the quiz.

### Rules of the game:

- The game can be played by 2-4 players. Choose who will be a bear and who a she-bear.
- You need a dice, figures (or stones, buttons etc.), some sweets, the quiz questions and the numbers 1-20 written on separate pieces of paper (coloured pencils for the game board).
- The player that throws the highest number starts. The **goal** is the bear den for hibernating. The **winner** is the one that gets there first. **Watch out!** To unlock the cave you need at least 10 points (or sweets): a bear can only survive the winter with such a store. If you get to the cave with fewer points, you have to go round the extra loop, to the right from the cave, until you get enough points.

### Explanation of symbols:

|                          |                                                                                                                                                                                  |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ?                        | Take a quiz question (according to the number you draw). The right answer = 1 point (or sweet) or a square forward, a wrong answer = lose a point (sweet) or go back one square. |
| <i>forest</i>            | You are safe here.                                                                                                                                                               |
| <i>hearts</i>            | If a bear and she-bear meet on this square, both gain 2 points.                                                                                                                  |
| <i>swords</i>            | If two bears or two she-bears meet on this square, they must fight. Who throws a higher number gains 2 points, the other loses 2 points.                                         |
| <i>2 dice</i>            | From this square you can choose which route you prefer.                                                                                                                          |
| <i>circle with cross</i> | You are in danger (people in forest), you must hide – miss one turn.                                                                                                             |
| !                        | Hunters have shot you, you have to start the game again.                                                                                                                         |
| <i>natural food</i>      | You gain various points (sweets) according to the number in the square, or you can go forward that number of squares. A higher number indicates a more energetically rich food.  |
| <i>food from people</i>  | You lose points (sweets) according to the number in the square, or you must go back that number of squares.                                                                      |

### Marking the game:

- **10 or more points (sweets) and first to the goal:**

Super Bear – you are not only strong and fast as a horse but also as cunning as a fox. You are the hero of the forest!

- **10 or more points, but not first to the goal:**

You have to hurry, not just eat lots, otherwise you’ll freeze! Are you a bear or a snail?

- **5 to 9 points:**

Lazy bear – you’re in danger of “bear’s hunger”, because you haven’t got enough fat reserves. You haven’t even found a den for winter yet, because you just wandered about.

- **Less than 5 points:**

Do you want to end up a bear skeleton? You’ll have to retrain as a teddy bear before it’s too late!



## Answers

**I.1.** bears: sun, polar, brown (or grizzly), sloth, panda, black, Asiatic black, spectacled.

**I.2.** top left: brown (or grizzly), top right: spectacled, bottom left: black, bottom right: polar.

**I.3.**

**I.4.** constellation: the Great Bear

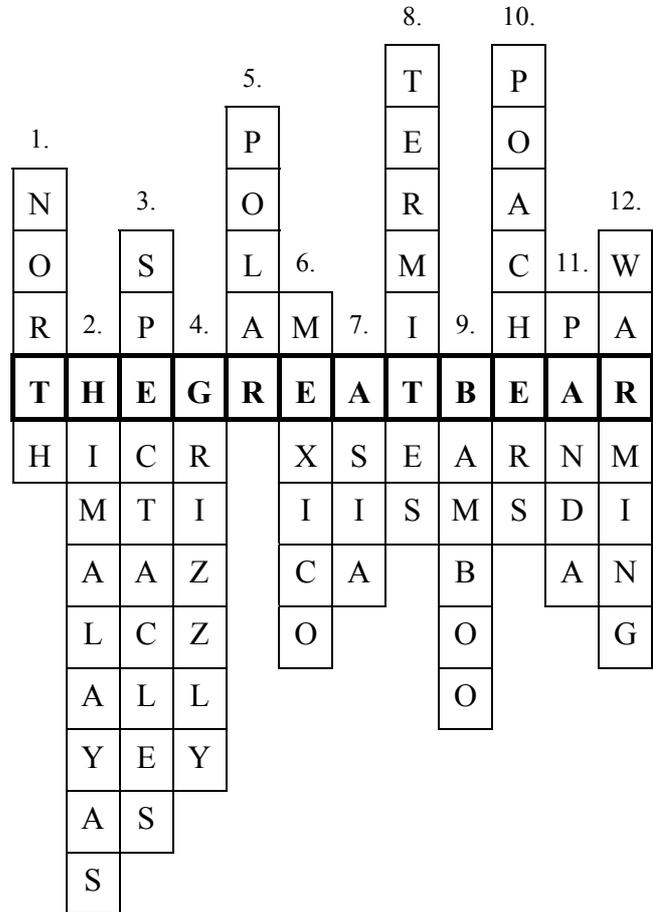
**II.1.a)** Ursidae, predator, omnivore, plant, solitary, weight, hibernation, body temperature, November, March, milk, loses, 10-year-olds, natural, injured.

**II.1.c)** 25-30 years is how long a bear lives in the wild, 20,000,000 years ago the first bear-like animals appeared, 140-320 kg is the weight of an adult male bear, 40% of her own body weight is what a she-bear loses while feeding her young in the den.

**II.1.d)** 1. hibernation – winter sleep, 2. predator – carnivore, hunts other animals, 3. dominant male – has the highest rank in the social hierarchy, other bears respect him.

**II.1.e)** 1. smell, hearing, sight, 2. ears, organ of smell (nose), teeth, eyesight, 3. withers, shoulder “hump”, where height is measured, 4. height, size of hind print, length, length of claws, number of teeth, size of fore print.

**II.2.** 1. Vysoké Tatry, 2. Západné Tatry  
3. Nízke Tatry, 4. Veľká Fatra, 5. Malá Fatra, 6. Strážovské vrchy, 7. Poľana, 8. Slovenské Rudohorie, 9. V. Karpaty



H O N E Y T A E H W  
R O W A N H F A  
A R O S E H I P S  
S T N A M R S S P  
E S S I B N H M S  
E P C F S A U H  
B I L B E R R I E S E  
W A E O M L E H E  
O R R G O S L R P  
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M H A I E P O U  
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G R A S S N A K E S S  
D E E R T S A M

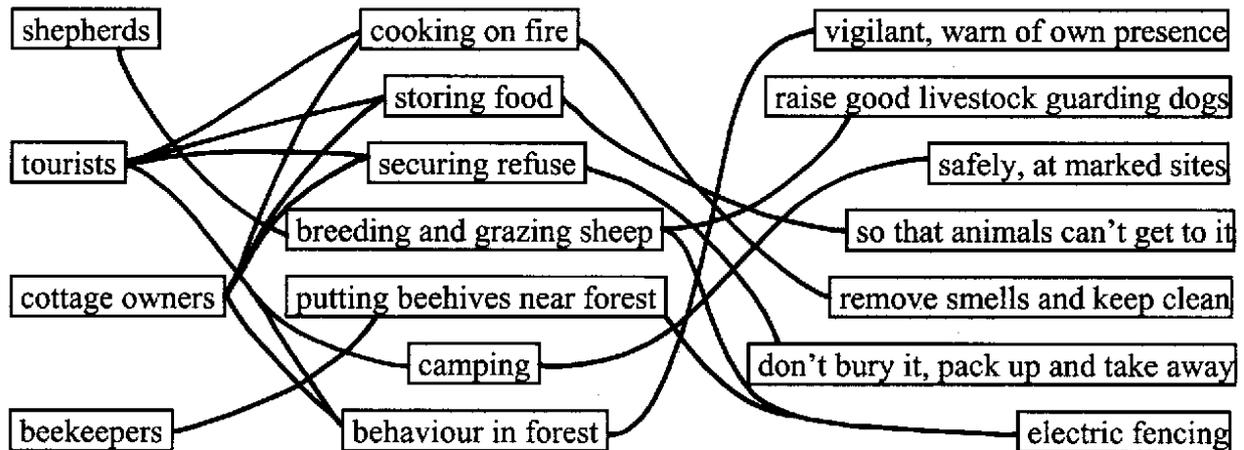
### **II.3.a)**

1. grass, herbs
2. bilberries, raspberries, rowan, rosehips, mushrooms
3. mast
4. ants, wasps, bees, honey, larvae, snails, worms
5. apple, plums
6. maize, oats, wheat, sheep
7. deer
8. mice, mole, hare
9. frogs, fish, snakes

**II.3.c)** tin can, bottle, bread, juice carton.

IV.1. a IV.2. 1I, 2D, 3A, 4E, 5C, 6F, 7B, 8G, 9J, 10H

V.1.



**VI.1.a)** 1. pine marten, 2. red fox, 3. white stork, 4. red deer, 5. brown bear, 6. hare, 7. grey wolf, 8 rook, 9. lynx, 10. roe deer.

**VI.1.c)** a. grey wolf, b. red fox, c. hare, d. pine marten, e. red deer, f. lynx, g. rook, h. white stork, i. roe deer, j. brown bear.

**VI.1.d)** 1. size of fox print is about the same size as that of a hare, but a hare's print does not have clear impressions of the toes; the lynx's prints don't have marks of the claws.

2. bear – it sleeps in winter (but can wake up for a while); stork – flies south. 3. carnivores – marten, fox, wolf, lynx, bear – prints have 4-5 digits per paw, with the same number of marks from the claws (apart from the lynx), and an impression of the back, heel, part.

**VI.2.a)** about 65-70 kg.

**VI.2.b)** five digits on the paws, the hind paw is bigger (longer) than the fore – that of an adult bear is about the size of a man's footprint.

**VI.3.** possible explanations:

1. the bear looked for insects under the bark, he ate soft cambium, or he climbed the tree, rubbed his back on the tree, marking the area: a message for other bears.
2. came to drink or cool off in the stream, to hunt fish or frogs.
3. searched for edible roots, tubers or beetles in the earth.
4. it's his bed: he rested in this place.
5. he fed, pulling the whole branch with berries towards himself.
6. we can easily recognise undigested food remains in bear faeces: berries, seeds, leaves; the colour shows that this time he probably ate bilberries.

**VII.** a) June      b) November      c) February      d) August      e) March      f) April  
g) January      h) September      i) December      j) October      k) May      l) July

**IX.** 1. b) 2. b) 3. c) 4. c) 5. a) 6. c) 7. a) 8. b) 9. c) 10. a)  
11. b) 12. b) 13. c) 14. a) 15. c) 16. b) 17. a) 18. b) 19. c) 20. a)



**SWS - Slovak Wildlife Society** is a not-for-profit Anglo-Slovak conservation organisation founded in 1998. Our goal is to help ensure the long-term survival of endangered species and protection of their habitats in Slovakia. We aim to mitigate problems of human-wildlife coexistence. We use a variety of methods including scientific research, artistic expression, environmental education and publication of information materials. Voluntary work, cooperation with local residents, exchange of information, experience and ideas among different nationalities are integral to our activities.

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## **“In the Tracks of Bears”**

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