

## WATCHING MOVIES AND DISCOVERY LEARNING

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DOI: [10.23741/RRGE20235](https://doi.org/10.23741/RRGE20235)

### ABSTRACT

*In this study, we aim to analyze the effects of discovery-based learning through film viewing on students' knowledge about a specific animal species and its habitat. The following hypothesis is tested: students' knowledge about animals and their environment is greater as a result of discovering information through watching videos. The study involved 20 fourth-grade students. In the first phase, a pre-test with 20 items was administered to assess initial knowledge about the topic. In the next phase, students watched videos at home about the studied subject. In the final phase, a post-test similar to the pre-test was conducted at school, and students discussed with the teacher other information they discovered through watching the films. The results confirm that discovery-based learning, facilitated by film viewing, is an effective strategy for stimulating students' interest and facilitating the acquisition of new knowledge.*

**Keywords:** *observation, primary education, model de instruire, strategie de instruire, metodă, cunoașterea mediului*

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**Cite this article as:** Ilie, A.-S., Buda, P.M., & Pahome, D. (2023). Watching movies and discovery learning. *Romanian Review of Geographical Education*, XII(1-2), 59-71. DOI: [10.23741/RRGE20235](https://doi.org/10.23741/RRGE20235)

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### INTRODUCTION

In dictionaries, the verb "to discover" is assigned meanings such as penetrating a mystery or secret, searching for and finding a hidden, unknown thing (Academia Română, 2009). In educational works from Romania, discovery-based learning is considered a method (Bocoș, 2013; Cerghit, 2006; Ionescu & Chiș, 1992; Oprea, 1979) or a strategy (Cristea, 2005). In studies from other countries, discovery-based learning is categorized as a method (Balim, 2009; Prasetya & Harjanto, 2020), a strategy (Petrovski, 2009), or a model of instruction (Bicknell-Holmes & Hoffman, 2000; Castronova, 2002).

Discovery-based learning, as a teaching method, involves conducting investigations and independent activities (individually or collectively) to explore, reconstruct, and rediscover scientific

truths (Bocoş, 2013). Discovery-based learning requires the existence of a problem or problematic situation and heuristic approaches to problem-solving, with the moment of discovery referring to the resolution phase (Bocoş, 2013). A student learns through discovery when they encounter a problem that they perceive as structured and for which they do not currently know a method of resolution. Consequently, they study the problem deeply, restructure the data, analyze the relationships and constraints, imagine possible solutions, find and apply the optimal solution, ultimately discovering the answer. The solution can represent new knowledge (rule, law), a method, a procedure, a technique, etc. (Bocoş, 2013).

Discovery-based learning is described as a learning strategy in which the student investigates "independently" to acquire new knowledge within the context of a "guided" activity (Petrovski, 2009, pp. 1-2). In this situation, the student engages in mental activity based on material that does not have a "final" form, in order to incorporate it into their cognitive structure. Lutiş (2008, p. 66) outlines the stages of a discovery-based learning activity that is designed and directed by the teacher: establishing the content; presenting the tasks and the learning project; "setting the time resources allocated for task resolution"; "distributing sources of information"; carrying out activities, with guidance from the teacher only upon request; presenting and evaluating the acquired knowledge; integration of new knowledge in the context of the lesson. In our study, the material or sources of information that students use as means for discovery learning are films in general and videos in particular.

Viewing films of various "types" (Dulamă, 2000) or formats (Ciascai et al., 2007) can always be associated with unintended or incidental discovery-based learning, as well as reflective learning (Bicknell-Holmes & Hoffman, 2000; Castranova, 2002). Films, as educational tools, are used in accordance with certain rules (Dulamă, 2006) in various learning activities (Dulamă & Gurscă, 2006) and within instructional models (Dulamă & Ilovan, 2007).

In studies conducted in Romania, primary school students have had the opportunity to discover in films how plants develop (Ilie & Cristea, 2020), what relationships exist between organisms and their environment (Ilie et al., 2020b), and the organization of rural settlements (Ilie et al., 2020a). Animated films have served as multimedia products that facilitate the discovery by primary school students of the structure of the solar system (Vereş & Magdaş, 2020a) and the processes involved in phenomena such as the water cycle in nature (Vereş et al., 2021) and the formation of seasons (Vereş et al., 2020). Primary school teachers can create contexts for discovery-based learning by utilizing multimedia materials from digital school textbooks (Buzilă et al., 2017; Dulamă et al., 2017b; Magdaş et al., 2017; Ilovan et al., 2018a).

Other films have facilitated the discovery of the production of geographic and geological processes and phenomena (Dulamă & Ilovan, 2007) and the acquisition of various types of knowledge (Vereş & Magdaş, 2020b). Films are recommended by teachers for understanding or "discovering" forests and for implementing forest education (Dulamă et al., 2016; Dulamă et al., 2017a; Pahome, 2023). Films allow students to discover spectacular landforms (Dulamă, 2014), address environmental issues, and contribute to the formation of relevant concepts in environmental education and sustainable development (Ilovan et al., 2018b; 2019).

Primary and preschool teachers promote discovery-based learning through films that illustrate children's activities (Dulamă et al., 2020a). Students preparing to become geography teachers learn through discovery how to create or utilize films in geography learning activities (Dulamă et al., 2020b; Dulamă et al., 2019).

#### ***Purpose, variables and research hypothesis***

Building on the presentation of discovery-based learning in the literature and the research conducted primarily in Romania based on films, this study aims to analyze the effects of discovery-based learning achieved by students through watching films on their knowledge about a specific animal species and its habitat. The independent variable is the individual viewing, at home, of

selected videos or films chosen by the students, while the dependent variable is represented by the volume of information about a mammal ("The Hedgehog") and its habitat, extracted by students from the films (videos). The hypothesis tested in this research is as follows: students' knowledge about animals and their environment is greater as a result of discovering information through watching videos.

## METHODOLOGY

**Participants.** The study involved 20 fourth-grade students from Secondary School No. 4, Moreni, Dâmbovița County, Romania. The students were aged between 10 and 11 years, including 9 girls. Participation in completing the tests and watching the films was voluntary. Throughout the study, the confidentiality of students' personal data was respected, as well as legal and ethical requirements, in accordance with the "General Data Protection Regulation" (GDPR) (2018). Participants were informed that it was important to work individually and independently throughout the research. They were advised not to discuss the test items and the content of the films with others, including family members, friends, or classmates, until the completion of the study.

**Procedure.** The study was conducted over two days and consisted of three stages. In the first stage, a printed pre-test was administered, which the students completed individually in class within the 15 minutes allocated by the teacher. In the second stage, the formative intervention took place. The students were given the following task: "Today, you will learn independently about hedgehogs by watching video materials available on YouTube or other educational platforms for children. Here are the steps you need to follow: (1) Open YouTube on your phone, tablet, or computer. (2) In the search bar, enter the word 'hedgehog.' (3) Choose and watch films that provide information about hedgehogs. (4) Write down in your notebook the information that caught your attention and that you consider important or new. We will discuss your discoveries in tomorrow's activity!"

The students had the opportunity to decide which films to watch, in what language, how many times to watch them, and how much time to allocate for viewing. In the third stage, a post-test was administered at school. The teacher discussed with the students to determine what other information they had discovered through watching the films that was not assessed through the tests.

**Instrument.** Data collection was conducted using two tests designed by the researcher, based on the experience gained from working with students. Each of the two tests (pre-test and post-test) consists of 20 dual-choice items, in a True-False format. Each correctly answered item was awarded 0.5 points. The maximum score for all correct answers is 10 points. Most items in the post-test were reformulated without altering the essence of the statements. The tests were administered in printed format. The time to complete each test is approximately 10-13 minutes.

## RESULTS

In Table 1, the results obtained by students in the pre-test and post-test are presented. In the pre-test, the number of students who identified the correct answer varied between 0 (for three items) and 20 (for one item). The correct answer was identified by 2-4 students on five items, by 6-9 students on five items, and by 10-12 students on five items. In the post-test, all students identified the correct answer for the same item they had identified in the pre-test. For three items, the correct answer was identified by 5-8 students, while for 16 items, the correct answer was identified by 10-18 students. The difference between the number of correct answers identified by students in the post-test and pre-test represents the relative number of pieces of information discovered by students through watching the films.

**Table 1**  
*Students' Results on the Pre-test and Post-test*

Statements from Pre-test	No. of Correct Answers			% of Correct Answers		
	Pre-test	Post-test	Pro-gress	Pre-test	Post-test	Pro-gress
1. The 17 species of hedgehogs live in all habitats.	9	17	8	45	85	40
2. Hedgehogs are wild animals with lengths of 13-30 cm, living on all continents.	6	16	8	30	80	40
3. Hedgehogs do not live in cities in Romania.	11	15	4	55	75	20
4. Hedgehogs hibernate during winter in nests made of grass and dry leaves.	10	17	7	50	85	35
5. Hedgehogs are active at night and sleep during the day.	8	16	8	40	80	40
6. Hedgehogs make provisions for winter by transporting apples and other fruits in their spines.	3	10	7	15	50	35
7. In summer, hedgehogs accumulate fat to survive winter during hibernation.	8	15	8	40	75	40
8. Hedgehogs make sounds like grunts when they meet and sense danger.	0	8	8	0	40	40
9. Hedgehogs move slowly, cannot climb trees, and do not know how to swim.	3	5	2	15	25	10
10. Hedgehogs have well-developed hearing and smell, but less developed vision.	11	15	4	55	75	20
11. Hedgehogs are mammals that live in groups of 3-5 years in natural habitats and up to 8 years in captivity.	11	18	7	55	90	35
12. Hedgehogs have soft, whitish spines that emerge one day after birth, growing and shedding gradually over a year.	12	17	5	60	85	25
13. The male hedgehog takes care of the young.	0	11	11	0	55	55
14. The female hedgehog has 1-11 young that she cares for for two months.	2	16	14	10	80	70
15. Hedgehogs feed on small animals (insects: wasps, bees; snails, worms, frogs, snakes) and seeds.	6	18	12	30	90	60
16. Milk and cheese do not harm hedgehogs.	4	14	10	20	70	50
17. Hedgehogs are immune to snake venom.	0	8	8	0	40	40
18. Hedgehog enemies include foxes, weasels, wolves, owls, and cats.	1	16	15	5	80	75
19. Hedgehogs have 5,000-7,000 spines that they raise vertically when in danger.	8	12	4	40	60	20
20. Hedgehogs curl up into a ball of spines when they are in danger.	20	20	-	100	100	-

## DISCUSSIONS

### *Discovery-Based Learning Activity in an Official Context*

Through this activity, students develop two general competencies outlined in the "Curriculum for the Subject of Natural Sciences. Grades III-IV" (Ministry of National Education, 2014, p. 1): 1. "Exploring the characteristics of bodies, phenomena, and processes"; 2. "Investigating the surrounding environment using specific tools and methods." Additionally, it contributes to the development of the following specific competencies: "1.1. Identifying relationships between bodies within phenomena and processes"; "2.1. Developing a personal plan for conducting an investigation

of the surrounding environment"; "2.2. Implementing the proposed personal plan for conducting an investigation of the surrounding environment"; "2.4. Formulating conclusions based on the results of the personal investigation" (Ministry of National Education, 2014, pp. 2-3).

The theme "Animals in Their Habitat: A Case Study of the Hedgehog," approached holistically, aligns with four themes or content areas specified in the curriculum: "Life Cycles in the Living World"; "Relationships Between Living Beings and Their Habitat"; "Adaptations of Living Beings to Life Conditions in Different Environments (meadows, forests, rivers, seas, deserts)"; "Feeding Relationships Among Living Beings (simple food chains)."

Regarding the life cycle of a mammal, students discover, through watching films, verbal information about the lifespan in natural habitats and in captivity, as well as reproduction (the number of offspring and their care). They observe in the films the number, size, and appearance of the young after birth, as well as the spines and body structure of hedgehogs in various situations (moving, during feeding, curled up in case of danger). Students hear the sounds hedgehogs make to communicate with each other, especially when they sense danger.

Regarding the relationship between this mammal and its habitat, students discover in the films that hedgehogs live in certain continents (they do not live, for example, in Antarctica), in specific habitats (in terrestrial environments with meadows; in natural and anthropogenic environments; in urban and rural areas). Concerning this species' adaptation to the environment, students learn from the films that these mammals hibernate during winter due to a lack of food, and to defend themselves from predators, they have spines on the outside and curl into a "ball" when in danger. In terms of feeding relationships, students discover in the films that hedgehogs are omnivorous mammals and feed on small animals, eggs, mushrooms, and seeds.

From a methodological perspective, the approach to this theme is centered on student activity and is conducted in a holistic manner, as recommended in the curriculum for science education (Ministry of National Education, 2014). During the film viewing, students are encouraged and trained to make observations and find answers to the "problems" they encountered in the pre-test, where they assumed certain information was correct and did not select all options based on the certainty that their choice was accurate.

#### *Discovery-Based Learning Activity Stimulated Through Testing*

The tests include 20 items of the True-False type. These items are categorized as closed-ended, binary discrimination items (Dulamă, 1996), with dual-choice options (Dulamă, 2001, 2012). Using the dual-choice technique, the student is required to associate the statement with one of the alternatives (in this case, True-False) (Dulamă, 2010, 2011).

In constructing the items, the requirement stated in the literature to formulate short and clear statements was respected (Dulamă, 2008a, b). Although the test was intended for fourth-grade students, the recommendation to include one idea in a statement (Dulamă, 2001, 2008b) was followed in the formulation of three items, each containing a single piece of information. In the two tests, 11 items include two pieces of information, while four items contain three pieces. Two items include lists, with each listed element being considered as a piece of information. Multiple pieces of information were included in the statements to assess a larger volume of information through a smaller number of items (20 items), to reduce the time resources needed for evaluation, to increase the difficulty level in choosing the correct option, and to encourage students to analyze each statement thoroughly.

In designing the statements, for the items where students must choose the "True" option, one or more correct pieces of information were included. The statements for the items where students must choose the "False" option are different, containing one false piece of information (2 items), two false pieces (2 items), three false pieces (1 item), one false and one true piece (2 items), one false and two true pieces (1 item), and one false and four true pieces (1 item).

In the literature, these items are used to assess knowledge previously memorized by students, to verify their understanding of facts and terminology (Dulamă, 2001, 2008b), and to identify observable relationships and characteristics of components in reality (Dulamă & Roşcovan, 2007). However, it is noted that a disadvantage of this type of item is the risk of guessing the answer (Dulamă, 2001, 2008a, b). By including multiple pieces of information in a statement, students were encouraged to evaluate each piece and decide whether the statement represents a complete truth or contains false (incorrect) information. Choosing the correct option requires students to employ critical thinking as evaluative thinking (Zlate, 1999) and to engage in reasoning to deduce or establish whether a statement is true or false, entirely or partially. The items included multiple ideas or pieces of information to provoke cognitive conflicts, stimulate curiosity, and prevent guessing the answer.

#### *Films Available for Discovery-Based Learning*

Students were tasked with watching films available primarily on the YouTube website at home. By searching using the keyword "hedgehog," they found a long list of videos in both Romanian and English, as well as some animated films. Based on the image, title, and duration displayed, students could choose the films they wanted to watch. After the post-test, in response to a question, it was found that all students (20 students) had watched videos, and 7 of them had also watched animated films. Although there is a large and varied selection of films on this subject, students could find relevant information by watching 3-4 videos. In formulating the task, students were not required or constrained to watch a specific number of films or particular films, to avoid blocking their curiosity and interest in the topic, which varies from student to student. The animated films available on YouTube are narratives that do not provide scientifically accurate information; therefore, students did not have the opportunity to discover through watching them the information corresponding to "scientific" truths.

#### *Discovery Learning from a Methodological Perspective*

In the literature, discovery learning is described as a method (e.g., Balım, 2009; Bocoş, 2013; Prasetya & Harjanto, 2020), a strategy (e.g., Cristea, 2005; Petrovski, 2009), or a model of instruction (e.g., Bicknell-Holmes & Hoffman, 2000; Castronova, 2002).

In analyzing and comparing the process undertaken by students in this activity with the four stages of discovery learning described by Bocoş (2013), many similarities can be observed. In the first stage, the pre-experimental one where students completed the pre-test, they recognized and became aware that they lacked the necessary information to choose the correct answer options (the problem or problem situation). The nature of the information included in the items generated a desire in students to find out the relevant information. Through the communication of the task, a search behavior (investigation, exploration, research) was triggered, leading to the discovery of unknown information. Since students enjoy watching movies, their willingness to view them was induced, serving as the method to solve the problem. In the second stage, students independently sought solutions to the problem (watching one or more films; revisiting the films) and discovered the sought information as well as other interesting unknown information. In the third stage, they processed (formulating, verbalizing, abstracting, generalizing) the discovered information into their short-term memory and wrote it down in their notebooks. In the fourth stage, students integrated the new information into their long-term memory (their own cognitive system). Students reported that they learned from the videos how to build shelters for hedgehogs, thus applying what they learned from the films.

Since in this study students used films as a means of learning, the activity carried out can be considered a discovery learning strategy through film viewing. The activity undertaken by the fourth-grade students resembles that described by Iuşiş (2008) in that the teacher established the content, presented the task, and outlined the "learning project," as well as evaluated the students'



knowledge. However, it differs in that the teacher did not allocate specific time resources, did not provide sources of information, and did not guide the students during the film viewing process.

The activity carried out by students shares some similarities with certain instructional models described in the literature. Since students watch the films at home before studying the topic in class, the activity has specific characteristics of the "flipped classroom" model (Dulamă et al., 2021). From the perspective of the knowledge process, the pre-test requires the recall of prior knowledge, the film viewing leads to meaning-making, and the post-test prompts reflection on the new knowledge. Thus, the activity can be compared to the Evocation-Meaning-Making-Reflection instructional model (Dulamă, 2008c; Dulamă et al., 2021; Steel et al., 1998).

By watching the videos, students achieved, through personal effort, a "discovery through documentation," an "informative" discovery, a reconstruction or rediscovery of certain "scientific" truths, acquiring theoretical knowledge (Ungureanu & Gînju, 2022), and obtaining new data (Iacubițchi, 2000). The literature specifies that in achieving this "discovery," the student's effort is combined with the teacher's support (Iacubițchi, 2000; Ungureanu & Gînju, 2022); however, in the discovery activity through video viewing, students had autonomy. Bocoș (2013) suggests using the phrase "didactic discoveries" for the discoveries made by students in the instructional process, which are rediscoveries and differ from scientific discoveries.

Depending on their contribution to obtaining new data (Iacubițchi, 2000), students achieved an "open-inductive discovery" (Marin, 1980) while researching and searching for information in multiple videos, noting the information (data), and interpreting it. Through this type of discovery, students learned to use previously known data (knowledge). The material used by the students—videos—presents information in a random order, and students must arrange and organize it themselves (Marin, 1980).

Based on the degree of independence of the student in discovery (Dulamă, 2008, p. 282), by watching the videos, students engaged in independent discovery learning, where the teacher provided a set of 20 statements (items; assertions) that can be interpreted as a problem situation or a series of problem situations. Students independently sought solutions (watching the videos) to find information about the topic and clarify certain aspects and dilemmas in order to fill in gaps in their knowledge.

The discovery learning conducted by students can be considered as "case-based learning," which has the most user-friendly architecture and is the most frequently used (Castranova, 2002). Unlike Castranova (2002), who illustrates a case of active, indirect learning through stories that demonstrate ways to apply principles, skills, or knowledge, in our case, students learn by watching videos, some of which include narrative text sequences. In our study, we considered the hedgehog as "a case" because this species is not representative or typical for mammals, but rather a particular case or an exception (it is covered in spines, not fur).

The discovery learning conducted by students has some similarities with "exploratory learning" or "conversation-based learning," which Castranova (2000) described and compared to the Socratic method, where questions are posed and answers are formulated. Castranova (2000) argues that exploratory learning, applied to a specific subject, relies on sets of questions posed by the teacher to the students. In our study, students engage in indirect exploratory learning by watching films. Even though the items in the tests are in the form of statements rather than questions, they prompt students to formulate questions in their minds. Solving the problem situation requires a heuristic strategy from the students.

Through the tests and the task of watching videos, the recommendations from the literature (Cristea, 2005) were followed. The teacher guided the students in organizing their discovery, planned a specific volume of information that students should uncover for the learning activity to be effective, and provided minimal guidance in the students' activities.

### ***Results of the Students and Hypothesis***

Analyzing the students' results from Table 1, it is observed that all students, both in the pre-test and post-test, have a "typical" mental representation of hedgehogs, associated with the idea that they curl into a ball of spikes when they feel threatened. Only three students recognized in the pre-test that the statement "Hedgehogs make provisions for winter by transporting apples and other fruits in their spikes" is false, and in the post-test, only 10 of them (50%) corrected this idea. This suggests how strong the visual mental representation of hedgehogs with apples stuck in their spikes is, an image frequently encountered in illustrated children's books. In reality, hedgehogs do not eat apples, do not transport them in their spikes, and do not store them in their nests.

The results show that students discovered a large volume of information from the films, which they stored in their long-term memory. The proportion of correct answers increased by 40% for six items related to the hedgehogs' habitat, behavior, and adaptations (hibernation, nocturnal activity). There was a significant increase in correct responses for items regarding the hedgehogs' natural enemies (up by 75%), the number of offspring (70%), maternal care (55%), food sources (60%), and their intolerance to dairy products (50%).

After completing the post-test, the identification of other information "discovered" by the students was facilitated through questions such as: How do they react to noises? How do they search for food? What types of animals are they based on their diet? What else do they need besides food? Why do they hibernate? What happens if humans touch the nest or the young? What enemies do they have? What other animals have spines?

The students' responses indicate that they have accurate representations of hedgehog behaviors in various situations they encounter in their environment: they are afraid of humans, their bodies curl into a "ball" in response to noise, they "sniff the ground" and "move slowly" when searching for food, and they hibernate for self-protection against the cold because "finding food during winter is difficult." The students demonstrate a good understanding of this species' needs (water; quiet; sufficient space to move freely and search for food; proper insulation for hibernation) and correctly classify them as omnivores. In the films, students also discovered: the existence of sea hedgehogs but not of porcupines; how to create shelters for hedgehogs; and the possibility of hedgehogs being pets for people. However, they did not learn from the films that the female hedgehog leaves her young if humans touch them or the nest, likely because they did not pay attention to this information.

### **CONCLUSIONS**

The results obtained confirm that discovery learning, facilitated through film viewing, is an effective strategy for stimulating student interest and facilitating the acquisition of new knowledge. In this study, films, particularly videos, proved to be effective tools for uncovering new information and acquiring a large volume of knowledge, providing a motivating approach to learning. By appropriately utilizing audiovisual materials, teachers can help correct misconceptions and foster accurate mental representations.

All authors contributed equally to the development of this study.



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## Appendix

### Tests

Determine whether the following statements are true (T) or false (F).

Nr. item	Pre-test		Post-test	
	Statements	T/F	Statements	T/F
1.	The 17 species of hedgehogs live in all types of habitats.	F	There are 17 species of hedgehogs adapted to all types of habitats.	F
2.	Hedgehogs are wild animals measuring 13-30 cm in length, found on all continents.	F	Various species of hedgehogs, measuring 13-30 cm in length, live on all continents.	F
3.	Hedgehogs do not live in cities in Romania.	F	Hedgehogs are wild animals, so they do not live in cities in our country.	F
4.	Hedgehogs hibernate during the winter in nests made of grass and dry leaves.	T	Hedgehogs make nests from grass and dry leaves where they hibernate during winter.	T
5.	Hedgehogs are active at night and sleep during the day.	T	Hedgehogs sleep during the day; being nocturnal, they are active at night.	T
6.	Hedgehogs store food for winter by carrying apples and other fruits on their spines.	F	Hedgehogs carry apples and other fruits on their spines to store food for winter.	F
7.	During summer, hedgehogs accumulate fat to survive winter while hibernating.	T	Hedgehogs accumulate fat during summer to survive winter while hibernating (sleeping).	T
8.	Hedgehogs make sounds like grunts when they meet each other or sense danger.	T	When they meet and sense danger, hedgehogs make sounds like grunts.	T
9.	Hedgehogs move slowly, cannot climb trees, and do not know how to swim.	F	Hedgehogs move quickly, can climb trees, but do not know how to swim.	F
10.	Hedgehogs have a well-developed sense of hearing and smell, while their vision is less developed.	T	Hedgehogs have poorly developed vision, while their hearing and sense of smell are well developed.	T
11.	Hedgehogs are mammals that live in groups, typically 3-5 years in the wild and up to 8 years in captivity.	F	Hedgehogs are solitary mammals that live 3-5 years in the wild and up to 8 years in captivity.	F
12.	Hedgehog spines are soft and whitish when they are born, growing and falling out gradually over a year.	T	A day after birth, hedgehog pups have soft, whitish spines that grow and fall out gradually over a year.	T
13.	Male hedgehogs take care of the young.	F	Male hedgehogs take care of the young.	F
14.	Female hedgehogs have 1-11 young, which they care for over two months.	T	Female hedgehogs can have 1-11 pups, which they care for for two months.	T
15.	Hedgehogs feed on small animals (insects: wasps, bees; snails, worms, frogs, snakes) and seeds.	T	Hedgehogs feed on seeds and small animals (insects: wasps, bees; snails, worms, frogs, snakes).	T



16.	Milk and cheese do not harm hedgehogs.	F	Dairy products (milk, cheese) do not harm hedgehogs.	F
17.	Hedgehogs are immune to snake venom.	T	Hedgehogs are immune to snake venom (vipers).	T
18.	Hedgehog enemies include foxes, ferrets, wolves, owls, and cats.	F	Hedgehog enemies include cats, foxes, ferrets, wolves, and owls.	F
19.	Hedgehogs have 5,000-7,000 spines, which they raise vertically when they are in danger.	T	When in danger, hedgehogs raise their 5,000-7,000 spines vertically.	T
20.	Hedgehogs curl up into a ball of spines when they feel threatened.	T	When threatened, hedgehogs curl up into a ball of spines.	A