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AutoSTEM lesson plan example 1

Title of your project lesson	**Animals in nature – "The Snapping Crocodile"**
The Children • *Age* • *Number* • *Learning needs*	*7 – 8 years (2nd grade)*
Learning Objectives	• To master the skill of following an algorithm and constructing a moving toy • Learn about physics and mechanisms, especially linkages • To consolidate knowledge about animals and habitats • To consolidate knowledge about rectangles • To consolidate the ability to draw • To acquire the ability to collect, analyse and present information
Automata to be constructed	The Snapping Crocodile
Resources	Paper, colored paper, scissors, cardboard, pencils, markers, skewer for drilling holes, split pins for movable connection of the elements
Cross-curricular links	Literature, world around, technology and entrepreneurship, mathematics
STEM content	• Classification of animals in the wild • Studying of animals' habitat

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	• Analysing the shape of the body of a crocodile and constructing a moving toy from movable joints of rectangular geometric shapes using the scissor arm principle
The script *Expected project results*	• Talk about zoos, their role in monitoring, studying, breeding and conserving animals. Reading text and extracting information from it. • Brainstorming to classify animals according to their habitat. Making a mind map for jungle animals. • Selective reading to study information about the biological characteristics of the crocodile as a reptile and predator - habitat, body shape, nutrition, reproduction. • Demonstration of a model of "The Snapping Crocodile" and discussion of its construction – how it moves, what geometric shapes it is made of, how the elements are connected, what causes its movement. • Presentation of an algorithm for making a "Snapping Crocodile". Preparation of the elements, discussing the possibility of using waste materials instead of cardboard, such as a box or shoe box, in order to protect the environment. • Work in groups to follow an algorithm and make a moving toy – "The Snapping crocodile".
Activity description, plan	To introduce the topic, the children's attitude towards animals is commented on: • Are all animals important for nature? • Are there useful and harmful animals, who has the right to determine this? • Where can we see animals from different parts of the planet?

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	Posting the topic: *Today we will read about the animals from the zoo, we will classify different groups of animals and, according to the habitat and we will get acquainted in detail with the crocodile to make a moving toy "The Snapping Crocodile"* 1. Reading a text from the textbook "Are they animals?" by Luigi Malebra. Discussion of what was read. Selective reading to find out which animals from the zoo the author mentioned in the story. Do zoos have any other role than to look after the animals? / implement programs for raising animals and releasing them / 2. Brainstorming lists different habitats on the planet and lists animals specific to the habitat. 3. A mind map of the jungle is made, listing the animals for that habitat. 4. The crocodile's attention, as a representative of the jungle, stops. Students present information they have studied about feeding, reproduction, species of crocodiles. Its features as a reptile and predator are discussed. 5. Illustrative material is shown for children to analyse the shape of the crocodile's body, paying attention to the jaw and teeth, the ability to open and close it abruptly, with a snap. 6. The teacher makes a demonstration of a model of the "Snapping Crocodile" and a discussion of its construction – how it moves, what geometric shapes it is made of, how the elements are connected, what causes its movement. 7. The teacher presents an algorithm for making a "Snapping Crocodile". In the preliminary preparation of the elements we consider the possibility of using waste materials instead of cardboard, such as a box or shoe box, in order to protect the environment. Apply mathematical knowledge of geometric shapes – rectangle, size, length, width of a geometric figure,

	finding the centre of a geometric figure by constructing diagonals. From the technological skills develop those for cutting, drilling, gluing, assembling a whole from parts, orientation in space. 8. The students are divided into groups of two and make a moving toy – "The Snapping Crocodile". They are given the opportunity to decorate it with colored paper or pencils, felt-tip pens. 9. The teacher evaluates the group work on the main criteria.
Criteria for assessment and self-assessment	• Is the technology for manufacturing the product observed? • Are the linkages assembled correctly? • Can the product move according to the initially set mode? • Is there any creativity in the decoration of "The Snapping Crocodile"?

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