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Title of the STEPAM Unit: All Parts Make a Whole

AUTHORS (NAMES /SCHOOL / COUNTRY): EXPERIENCE WORKSHOP, JAGODINA

RELATED SUBJECTS	AGE GROUP OF THE STUDENTS	TOTAL ACTIVITY TIME	LEARNING OBJECTIVES DURING THE LESSON SUBJECT-SPECIFIC COMPETENCIES	LEARNING OBJECTIVES AFTER THE LESSON
Science, Mathematics, Physical Education, Language, Arts	Grades 3–4 (approx. 8–10 years old)	90–120 minutes	Developing the concept of fraction, understanding the relationship between parts and the whole, applying the knowledge of fractions in real-life situations	Students use fractions to solve real-life problems

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OVERVIEW: TOPIC & PURPOSE

Students will explore fractions through engaging, hands-on activities that connect nutrition, nature, and culture. They will apply maths to real-world contexts, create fraction-based models, and express understanding through movement, construction, and art.

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ACTIVITY PREREQUISITES -

STEAM ELEMENTS

ELEMENT 1: context presentation	• Introduction to fractions using fruit salad • Exploring food pyramids and diverse cultural foods • Discussing animal habitats linked to foods
ELEMENT 2: creative design	• Fraction Pizza Challenge • Build a Fraction Creature with recyclable/organic materials • Carpet design using colour fractions
ELEMENT 3: emotional and social learning	• Games: Caterpillar Race, Zoo Hunters, Pizza Tag • Teamwork in group building and design • Peer learning through collaborative problem-solving

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STEAM SUBJECT ELEMENTS

STEAM SUBJECTS	SCIENCE	TECHNOLOGY	ENGINEERING	Physical Education	ARTS	MATHEMATICS
SHORT INTRODUCTION TO RELATED SUBJECT ELEMENTS	Animal classification, habitats	Use of apps (MyPyramid, MyPlate), digital drawing	Building Fraction Creatures	Caterpillar Race, Zoo Hunters, role-playing games	Carpet design, Fraction Pizza art	Applying, comparing, visualising fractions

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SYLLABUS

LESSONS	SUBJECTS	TOPIC OF THE UNIT	LEARNING OBJECTIVES DURING THE LESSON: SUBJECT SPECIFIC COMPETENCIES	LEARNING OBJECTIVES AFTER THE LESSON: STEAM COMPETENCIES
0 **(Introduction)** **Fractions through Fruit Salad** **(5–10 minutes)**	**Science, Mathematics, Health**	Groups make fruit salads using recipes with fractions. Discussion about fractions in the recipes.	Collaborate with peers to solve fraction-based and logic puzzles Apply fraction knowledge in art and design	Students can apply fraction concepts in daily life
Activity 1 ***Food Pyramids and Cultural Foods*** ***(15–20 min)***	**Arts, Physical education, Technology Mathematics,**	Build a digital food pyramid using MyPyramid or MyPlate apps. Discuss healthy choices in different cultures and habitats.	Recognise diversity in food, and cultures Use digital tools to visualise and apply fractions	Students can work collaboratively and use digital tools creatively

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Activity 2: ***Games*** ***(15 min)***	**Science, Arts, Physical education, Mathematics,**	Caterpillar Race, Zoo Hunters, Pizza Tag to reinforce fractions and classification.	Develop students' agility, spatial awareness, and cooperative play skills Reinforce understanding of fractions and animal classification through logic and movement	Encourage teamwork and peer interaction.
Activity 3: ***Fraction Pizza Challenge*** ***(15–20 min)***	**Science, Arts, Mathematics,**	Create a pizza with toppings represented by fractions.	Identify and compare unit fractions (½, ¼, ⅛) in real-life contexts	Students can create visual representations of fractions
Activity 4: ***Build a Fraction Creature*** ***(20–30 min)***	**Science, Arts, Physical education, Mathematics, Engineering,**	Groups design and build creatures with body parts representing fractions.	Understand and apply the concept of fractions as parts of a whole	Students can explain how parts combine to make a whole
WRAP-UP & EVALUATION (15–20 minutes):	**Science, Arts, Mathematics,** Technology,	Design a carpet with colour-fraction rules.	Visualise and apply fractions in design	Students can visualise apply and represent fractions in an artistic

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Fraction Art Carpet		Use grid templates and recreate design digitally (Microsoft Paint).	Strengthen ICT and group work skills	way in our digital world.

INSTRUCTIONAL PLAN BY LESSON (COPY AS MANY TIMES AS NEEDED)

LESSON Grade 3-4 Science, Engineering, Physical Education, Art (Language) and Mathematics

TIME PLAN	TEACHING & LEARNING ACTIVITIES	MATERIALS	LEARNING OBJECTIVES
INTRODUCTION **(5 – 10 minutes)**	Students in groups have the task of making a fruit salad from pre-prepared ingredients, mostly pre-prepared fruits. Each group is given a receipt for making fruit salad. After making salad teacher is discussing with students about the fractions	Fruits, accessory with chopping fruit (safe for kids), or pre prepared cut fruit. Attached PDF slides: Slide nr. 1-4	Students are repeating basic knowledge about fractions as parts of the whole

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	described in the receipt (what is one half of something, how many quarters are contained in one whole etc.)		
LEARNING ACTIVITIES **(60-70 minutes)**	The food pyramid and the relationship between nutritional goals are explained to the students. Students use a mobile phone app that they use to create a food pyramid. Students are introduced with the different cultures and specific food ingredients (caterpillars, grasshoppers, shrimps, frogs, fish, etc.). in international cuisine.	Attached PDF slides: Slide nr.5 - 8. Mobile app link https://play.google.com/store/apps/details?id=com.risecreative.mypyramid&hl=en_US  https://play.google.com/store/apps/details?id=gov.usda.startsimple&hl=en_US	Students apply knowledge of fractions

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	Students expand their knowledge about habitats, communities, living conditions of certain animals (Insects, birds, amphibians and mammals). Caterpillar game. Pupils are divided into two to four groups. Each child puts on a vest (Slide 9. Picture on left). On the front of the vest is a sheet with a question/task, and on the back is a sheet with the answer to a question on another child's vest. The children's task is to find the friend from the same group whose back has the sheet with the	 Slide 9, caterpillar game.	

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	answer to the question/task on their vest. When they find the answer or the student with the answer, they grab him by the shoulders from behind and thus make a caterpillar (Slide 9, picture on right). Then together they look for the student who has on his back the answer to the question of the student who is at the beginning of the caterpillar. The game is over when all the students find the answer to the question, i.e. when the caterpillar bends and makes a circle. 15 minutes **FISHING CONES** ACA pise		

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		Slides ACA Fishing Cones	
WRAP-UP & EVALUATION **(15-20 minutes)**	**Art & Technology.** Students are designing carpet with given instructions. They are divided into small groups (3 – 5 students). Students are given worksheet (A3) with drawing of carpet (Slides 10 – 11). The task is to create carpet design with the following rules: red color must cover one third of the carpet, yellow	Slides 10 – 11	Enhance problem-solving skills Creating a design Respecting some basic principles of esthetics Developing skills of using drawing software Learning to work and cooperate in a group Applying knowledge of fractions in real-life situations

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	should cover one fourth of the carpet, orange one sixth of the carpet and the rest should be covered with blue. While doing problem solving, students are also encouraged to think about the esthetic of design. If the students cannot find a way to be sure that they adequately determined the parts of the carpet (one third, one quarter, one sixth) teacher gives them worksheet with carpet grid design. After creating design that meets the given criteria, students draw the carpet by using Microsoft Paint.		

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EVALUATION PLAN BY LESSON

LESSON	EVALUATION CRITERIA	EVALUATION METHOD
All	Did students demonstrate understanding of fractions in practical tasks?	Observation, group presentation
	Did students work collaboratively?	Self-evaluation, peer feedback
	Did students use digital tools effectively?	Review of digital outputs
	Did students creatively apply fraction knowledge in art?	**Evaluation of designs and models**
	Homework done and uploaded in padlet	Observation & peer-review

HOMEWORK

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Students have the task to do the activity of the opposite group. For example. students who worked with transparent foil have the task of making art installations by combining realistic shadow objects and drawing, and conversely students who made art installations have the task of drawing on transparent foil. The completed task should be recorded in video format and attached to the padlet.

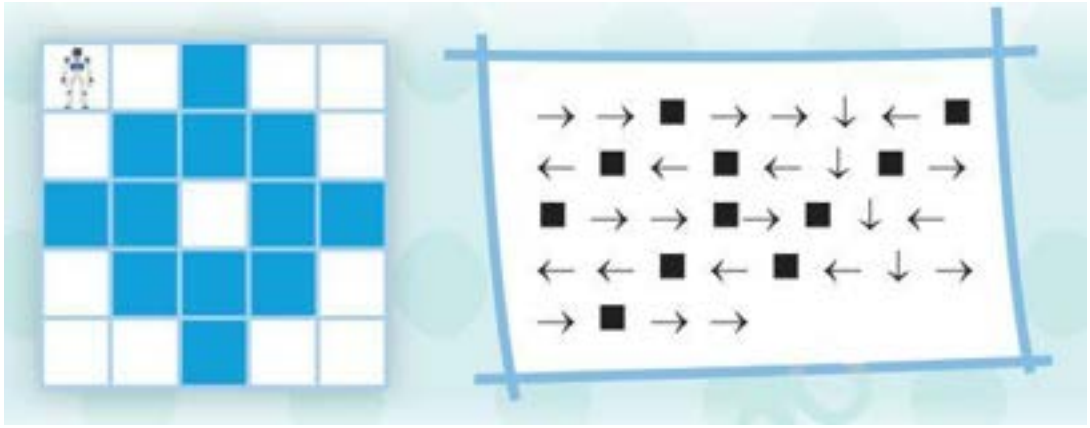
NOTES –

Picture 1

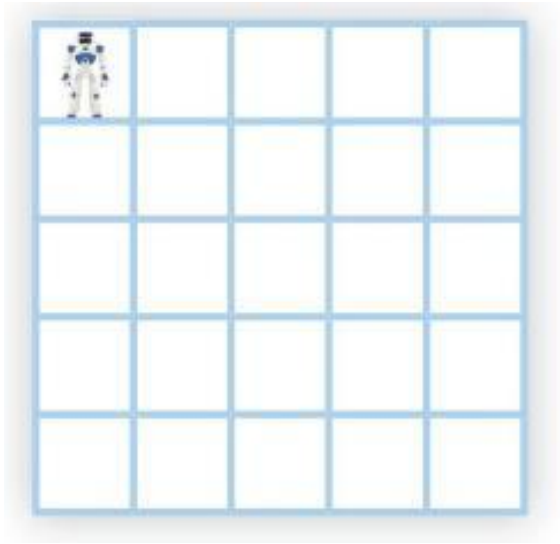
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Picture 2



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ACTIVITY SHEETS TO BE LINKED -
EVALUATION MATERIALS TO BE LINKED -
REFERENCES / SUPPORTING MATERIALS TO BE LINKED

PDF / PPT slides:

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