Teacher: F.Merve Yıldırım
Subject: Extracurricular activity

Title	**Planning a budget for a Cappadocia Trip**	**Time**	3 hours
Subject:		**English Language, Math, Internet Literacy**	
Aims		**General competence**[1]: Awareness of computational thinking concepts to create a budget for a Cappadocia trip. **Specific competence**[2]: Allowing students to deepen their understanding of both Cappadocia as a significant touristic place and computational concepts. **Aim of the activity:** How to make a trip budget.	
Key CS elements:		Decomposition; Pattern recognition; Abstraction; Algorithm design.	
Age group :		**14-16 year old**	
Learning place:	**Çetin Şen Science and Art Center**	**Activity type:**	**extracurricular**
Resources: 1. Websites or apps about accommodation, food like tripadvisor, foursquare, booking etc. 2. Computer/ mobile phones with internet access.			

Learning development:

Problem definition:

Creating a budget for your Cappadocia trip using computational thinking involves breaking down expenses into categories, estimating costs, and considering variables like accommodation, transportation, food, activities, and miscellaneous expenses.

Introduction

- Introduce Cappadocia as a historical and tourist destination in Turkey.
- Show pictures or videos highlighting the unique landscape, hot air balloon rides, and other attractions.
- Discuss the importance of budgeting and financial planning when traveling.

Four Principles of Computational Thinking:

1. **Decomposition:** Breaking down complex steps into smaller, manageable parts.
2. **Pattern Recognition:** Identifying identifying similarities or patterns within data.
3. **Abstraction:** - Discuss abstraction: focusing on essential details while ignoring unnecessary information
4. **Algorithm Design:** Creating a step-by-step plan for creating the budget.

I. Decomposition:

- Explain the concept of decomposition: breaking down a complex problem into smaller, manageable parts.
- Explain each group to identify different categories of expenses for a trip to Cappadocia (transportation, accommodation, food, activities, miscellaneous).
- Have each group list potential expenses.

Task:

- Have students brainstorm and list potential expenses under each category.
- Guide them in estimating the costs for each category (e.g., different hotels, travel options like bus or car, meals, and excursions).

The teacher explains the task:

My name is Merve and I'm planning to go to a road trip around Cappadocia. I don't want to spend too much money; I'm not interested in going on an extravagant road trip. I want to travel on a budget – the less I spend, the happier I am. I'm only willing to spend $300.There are some things I would like you to consider while planning my road trip:

1. I would like to visit at least three towns/villages of Cappadocia. (Cappadocia is the name of the region and it consist of some towns and villages like, Avanos, Ürgüp, Derinkuyu, Göreme, Mustafa Paşa, İbrahim Paşa, Ortahisar, Uçhisar etc.)
2. My road trip should last at least three days. In the evening of the third day of the trip I should be back.
3. I am a food fanatic. I love trying new foods – from local street food to gourmet food. I want to try traditional cuisine at least one evening in a good restaurant.
4. I'm a solo traveler so I don't mind being in hostels and meeting new people. And the fact that I'm a light packer is a plus in these situations.
5. I enjoy sightseeing and taking pictures of famous landmarks and enjoying the scenery.
6. I can use public transportation. (From Kayseri to Nevşehir – bus, from Nevşehir to towns or villages minibus or taxi)

7. I want to buy at least two souvenirs for my best friends.

II. Pattern Recognition

- Introduce pattern recognition: identifying similarities or patterns within data.
- Guide students in recognizing patterns in the expenses identified earlier.
- Discuss with students the patterns they notice when planning a budget. For example:
  - Costs vary based on the type of accommodation or transportation.
  - Discounts may be available for groups or early bookings.
  - Some activities or meals might be cheaper in certain locations.

Task:

- Encourage students to recognize cost-saving patterns, such as:
- Booking in advance to get cheaper transportation or accommodation.
- Choosing meals from local vendors instead of restaurants.
- Identifying free or low-cost activities.

III. Abstraction

- Discuss abstraction: focusing on essential details while ignoring unnecessary information.
- Abstracting essential details for each category and implementing the information into their budgeting plan. Students make the necessary arrangements via taking into consideration all the expenses.
- For example, they should focus on high-priority expenses like accommodation and transportation before dealing with secondary expenses like souvenirs.

Task:

- Ask students to prioritize the most important categories and make adjustments if needed to meet a set budget limit.

IV. Algorithm design:

- Introduce the idea of algorithm design in the context of creating a step-by-step plan for budgeting.
- Demonstrate how to create a budget by following a structured approach:

Step 1: List all categories.
Step 2: Estimate costs for each category.
Step 3: Sum up all expenses.
Step 4: Adjust the costs if the total exceeds the budget.
Step 5: Finalize the budget.

Task:

- Have students create their own budget plan for a trip to Cappadocia, using the steps of algorithm design.

Conclusion

Discuss the importance of computational thinking in everyday tasks like budgeting.
- Review the key principles learned: decomposition, pattern recognition, abstraction, and algorithm design.
- Reflect on the challenges encountered and the effectiveness of using computational thinking in budget planning for a trip to Cappadocia.
- Encourage students to apply these principles in other problem-solving scenarios.

Homework/Extension:

- Assign students to create a personal budget plan for a trip to another destination of their choice using computational thinking principles.

Assessment:	Evaluate students based on their participation in group discussions, their ability to identify expenses and abstract essential details, and the effectiveness of their budgeting algorithms.
Expected results:	• Students will understand the basics of budgeting and financial planning. • They will apply computational thinking to solve real-life problems. • Students will be able to create a detailed budget plan, recognizing cost patterns, and abstracting key components of trip expenses.

Notes:

- Students use English language as a communication tool to create the budget with their Math skills. They will also be aware of the importance of Cappadocia as a tourist destination.