

## **Sea and Learn – Lesson Plan: A Family Day Out**

**Key Stage:** Two

**National Curriculum Links:** Ma2 1a, 3a, 4a

**Main Subject Focus:** Mathematics

### **Learning Outcomes:**

Children will:

- Be able to use all four operations to solve word problems involving money

### **Resources Required:**

- Whiteboard and pens
- Calculators

### **Lesson Structure:**

1. Begin by playing warm-up game 'Making Numbers' (See Teacher's Notes)
2. Next introduce the task related to working out the cost of a family day out at the dockyard (See Worksheet 1)
3. Ask children to work individually or in pairs to work out the answers to questions 1 and 2 only. Remind children about setting work out correctly e.g. if setting sums out into columns, making sure they have the decimal point/hundreds, tens and units lined up correctly etc.
4. Once every pair has completed questions 1 and 2, ask some pairs to show their methods of calculation. Ask other children to share their methods if they are different.
5. Ask each pair to complete the rest of the worksheet. Set a time limit for the completion of the final questions. You may wish to remind children about finding percentages of numbers and equivalence.
6. Once again, ask the children to share their calculation methods, including any difficulties they encountered. Make sure that children are happy with the methods you have demonstrated.
7. To finish, play a game of 'Making Money' (See Teacher's Notes)

### **Extension/Homework ideas:**

- Ask the children to work in pairs or small groups to plan the total costs associated with a day out at the dockyard. This should include travel costs, buying refreshments, car parking etc. Children may wish to create their own spreadsheet using Microsoft Excel. (See Worksheet 2) They should present their workings to the rest of the class.

## **Sea and Learn – Teacher’s Notes**

### **Making Numbers**

1. Present the children with three digits, e.g. 2, 3 and 7.
2. Can they use these digits to make every number from 0 to (say) 20 e.g.  $2 - 2 = 0$ ,  $3 - 2 = 1$ ,  $3 - 3 + 2 = 2$ ,  $(3 - 2) \times 3 = 3$  etc.
3. Discussion comes from the many different ways to create each number. You can change the activity by creating new rules for how the children can use the digits or restricting the number of operations to be used.

*Idea from: [www.primaryresources.co.uk](http://www.primaryresources.co.uk)*

### **Making Money**

1. Present the children with a target figure e.g. 20p
2. Ask them to explore how many different ways they can make 20p. Then increase to another figure that you feel appropriate (e.g. £1.00)
3. Discussion comes from the many different ways to make 20p. You can change the activity by creating new rules for how the children can use the digits or restricting the number of operations to be used.

*Idea adapted from: [www.primaryresources.co.uk](http://www.primaryresources.co.uk)*

## Sea and Learn – Worksheet (1)

A family day out to the Historic Dockyard is planned for 2 adults and 2 children. The prices for admission to the attractions are shown below.

A single ticket allows **one** entry to **one** attraction – there are **four** attractions in total (HMS Victory, Mary Rose, HMS Warrior & Action Stations).

An **all-inclusive** ticket allows **one** entry to **each** of the attractions.

Admission costs are as follows:

	<b>SINGLE</b>	<b>ALL-INCLUSIVE</b>
<b>ADULT</b>	£9.70	£15.50
<b>CHILD</b>	£8.00	£12.50
<b>FAMILY</b>	£33.00	£45.00
<b>VISITOR GUIDE</b>		£3.75



*Image courtesy of Portsmouth Historic Dockyard*

1. How much would it cost two adults and two children to visit one attraction if they were buying single tickets?
2. How much would it cost for the same family to visit all of the attractions once if they were buying all-inclusive tickets?
3. Would it be cheaper if they bought a 'family' ticket to all of the attractions? If so, by how much?
4. How much change would you get from £50.00 if you bought one adult and three child tickets to a single attraction?
5. Each member of the family purchases a copy of the visitor guide. How much will this cost?
6. A Senior Citizen can buy tickets at a reduced rate. They are 25% cheaper than a normal adult rate. How much would single ticket cost? How much would an all-inclusive ticket cost?

## Sea and Learn – Worksheet (2)

Can you work out the total costs associated with a family day out to the Portsmouth Historic Dockyard. You will need to work out the cost of:

- Parking the car
- Travel to Portsmouth by train
- Ticket prices to the attractions
- Buying lunch for everybody
- Other purchases (gifts, souvenirs, visitor guides)



Image courtesy of Portsmouth Historic Dockyard

### Scenario:

The family (2 adults and 3 children) live in Chichester and have decided to drive to Havant and get the train into Portsmouth. They were in a rush before they left and have not had time to prepare a picnic lunch. They wish to visit HMS Victory and Action Stations. Each child would like a visitor guide too.

### Costs:

**Parking charges in Havant:** Up to 2 hours - £1.50  
Up to 4 hours - £2.70  
Up to 8 hours - £4.80  
Over 8 hours - £6.00

**Travel to Portsmouth by train:** Adult = £2.75 (single – one way)  
Child = £1.80 (single – one way)

**Admission Charges:** Adult = £9.70 (per attraction)  
Child = £8.00 (per attraction)  
Adult = £15.50 (all inclusive)  
Child = £12.50 (all inclusive)  
Family = £33.00 (per attraction)  
Family = £45.00 (all inclusive)

**Visitor Guides:** £3.75 each

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### **Lunch:**

Tea = 75p

Coffee = 90p

Soft drink = 85p

Milkshake = £1.35

Water = 65p

Ice Cream = 75p

Hot pasties = £2.20

Jacket Potato = £3.40

Sandwich = £1.75

Soup & Roll = £3.95

Hot Dog = £2.50

Big Cookie = 85p

Cake = £1.25

Fruit (apples, bananas etc) = 65p

### **Gifts/Souvenirs:**

Pencil = 45p

Eraser = 60p

Ruler = 95p

Pencil Case = £1.95

HMS Victory book = £4.95

HMS Victory poster = £2.95

Nelson book = £3.45

Nelson portrait = £1.25

### **Task:**

In your group, work out how much it would cost a family to visit the historic dockyard, taking into account their travel costs, lunch and any gifts they may purchase. Set your visit costings out carefully, using a spreadsheet if possible, and then present your information visually using an A3 or A2 sheet of paper. Be ready to share your costings information/presentation with the class.



*Image courtesy of Portsmouth Historic Dockyard*