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The components

Teacher's Book

The *Scholastic Times Tables Teacher's Book* provides you with a wealth of activities to help your children master the times tables. Work through the activities one by one or dip in and out – whatever works best for you and your class!

Choose from a bank of activities which promote problem-solving, reasoning and fluency. Aim to use a range of activities so that children have an opportunity to approach the times tables in a variety of ways.

The activities use a wide range of resources: some rely on using concrete resources, others have a whiteboard component to them, and others may require a photocopiable resource which can be downloaded from www.scholastic.co.uk/timestables-resources. Finally, some require no resources at all.

Key information to help you get the most out of your times tables practice

Visual examples of how to represent multiplication across all key stages

Where relevant, year groups are highlighted so you can be sure the activity matches your needs

Handy table to help you choose quickly which activity will work best with your children

Assessment questions to use during activities or after. Many are easily adaptable to use with a variety of activities or times tables.

1 THE 2-, 5- AND 10-TIMES TABLES

After Stage 1, children should have been introduced to the 2-, 5- and 10-times tables, and should enter lower Key Stage 2 being relatively secure in their knowledge of them. In this book, these times tables are used as Foundation multiplication tables to work out a range of other multiplication facts. For example, the 2-times table is used to work out the 4-times table (through doubling).

The 2-, 5- and 10-times tables should continue to be explored using a range of representations, and the activities in this section are designed to encourage fluency and recall of these Foundation multiplication facts. Patterns in multiplication tables can be drawn out by using 10s frames. For example, the 10s frame can be represented as shown below.

Any multiplication statement can be represented using arrays, which are especially useful for showing commutativity (meaning that multiplication can be done in any order).

10 THE 2-, 5- AND 10-TIMES TABLES

Activity	Objective	Focus	Organisation	Development
2s, 5s and 10s matching pairs (p152)		Rapid recall of the 2-, 5- and 10-times tables	Pairs	Fluency
Picture this (p152)	To recall multiplication and division facts for the multiplication tables up to 12 x 12 (Year 4)	Representing multiplication facts in the 2-, 5- or 10-times tables	Pairs	Reasoning and problem-solving
Arranging arrays (p152)		Representing multiplication facts as arrays	Pairs	Problem-solving
Fifty times table (p153)		Recognition of multiples of 2, 5 and 10	Whole-class and groups	Fluency and reasoning
5s and 10s (p153)		Exploring links between the 5- and 10-times tables	Pairs	Reasoning

Assessment

Use these questions or similar to help you assess children's understanding during and after these activities:

- Starting from 0, can you count on in 5s? Can you count on in 10s? Which numbers do you say in both counts? Why is this?
- Can you count backwards in 2s from 20?
- If you start at 0 and count in 2s, will you ever say any odd numbers? Why/Why not?

THE 2-, 5- AND 10-TIMES TABLES

Practice Book links provide further opportunities for revision and practice

List of all resources, including photocopiable pages and digital files for class display

Clear breakdown of how to work through each activity, including questions for deepening and assessing understanding

Strategies for extending each activity to encourage deeper thinking and provide further practice

ALIEN TRIPPODS

You need: resource 3 (Alien tripods)

STEPS

- Give each child a copy of resource 3 (Alien tripods).
- Ask the children to look at the first alien tripod. What do you think the link is between the numbers in the question?
- Establish that the numbers are all linked to a fact in the times table ($6 \times 4 = 24$).
- Ask the children if there are any other multiplication or division facts they could write using the numbers in the first tripod. Establish that, due to commutativity, $4 \times 6 = 24$, and that due to division being the inverse of multiplication, $24 \div 6 = 4$ and $24 \div 4 = 6$.
- Challenge the children to find all the remaining alien tripods with the number 4 in them (that is, those that show the 4-times table facts from 1 x 4 to 12 x 4).
- Once a child has completed a tripod, ask them to write the 4 calculation facts that the tripod shows in the box underneath the tripod.
- Invite the children to discuss answers together, and to help convince each other if there are any differences in opinion.

EXTEND

How could you investigate tripods for other known times tables, or tripods for the 4-times table beyond 12 x 4?

FRANTIC FOOTIE CARDS

You need: digital file 2 (Frantic footie cards); concrete resources such as cubes, number blocks and 50p coins for support as needed

STEPS

- Display digital file 2 (Frantic footie cards) and read the first question together. Should footie cards be sold in packs of 4? They cost 50p per pack. (For this collection of 20 frantic footie cards. Assuming [we] has not been given any cards, how many packs of cards has she bought?)
- Ask: What additional information do you need to solve this problem? (What calculation is the problem linked to? Invite the children to discuss these questions in pairs.)
- Discuss children's ideas together, and establish that they need to work out how many groups of 4 there are in 20. Model this together, using cubes, number blocks or another representation to represent each group of 4. Establish that Eve has bought 5 packs of cards.
- Read the second part of the question together: How much money has Eve spent? Invite the children to discuss with their partner how they could answer this question, and then share ideas, representing the working with 50p coins. Finished.
- Invite pairs to work together to solve the remaining problems from digital file 2. Remind the children that they need to ensure that both they and their partner understand and agree on the answer.

EXTEND

Provide further factual children with different numbers of cards, extending the number of cards beyond 20 that is beyond 12 x 4. Can the children use repeated addition and/or other strategies to divide multiples of 4 greater than 40 by 4?

FIND THE FACTS

You need: digital file 3 (Find the facts); a range of concrete resources suitable for representing multiplication facts

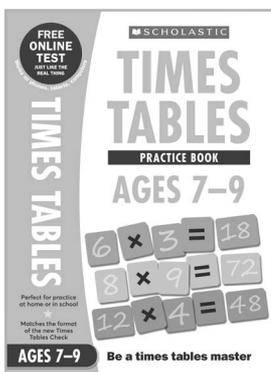
STEPS

- Display digital file 3 (Find the facts). Ask: What do you notice?
- Invite the children to discuss what they notice with a partner or in a small group and then share some thoughts and observations in a larger group.
- Ask: What multiplication facts can each picture show? Identify 7 other multiplication facts that each representation shows.
- Ask: Are there any other number facts that each picture shows? Encourage the children to identify the related facts through commutativity and inverse relationships.
- Ask: Can you represent show another representation to show the same set of facts? Once the children have created 1 alternative representation, ask them to create another representation for the same set of facts, and keep repeating this. This will enable them to explore and make connections between different representations.

Possible representation of $4 \times 4 = 16$

EXTEND

Ask the children to create their own sets of representations for other times table facts or for facts from other times tables they are familiar with.



The Practice Book

The *Scholastic Times Tables Practice Book* has been designed to provide children with further opportunities for revision and practice of the times tables.

Use it alongside the *Teacher's Book*, as part of general class practice or for home learning. Look for the *Practice Book* icon  in the 'You will need' section at the start of an activity for activities which relate directly to the *Times Tables Practice Book*.

Each unit focuses on a different topic or times table.

This section provides children with the opportunity to revisit what they have learned with visual examples to support their understanding.

Children should work through the questions in order for varied practice which builds in difficulty.

9 The 11-times table

Noah knows nearly all the times tables – he has just got the 11- and 12-times tables to learn! Noah can use his knowledge of the 10-times table to help him work out the 11-times table.

He notices that $3 \times 11 = 33$, which is 1 lot of 3 more than $3 \times 10 = 30$.

He notices that $12 \times 11 = 132$, which is 1 lot of 12 more than $12 \times 10 = 120$.

He notices that $8 \times 11 = 88$, which is 1 lot of 8 more than $8 \times 10 = 80$.

Noah has made this array to show what he has noticed.

1 Draw an array to show the multiplication. Use the example in the box above to help you.

$4 \times 11 =$ _____

2 Complete the number sequences below.

a. 0, _____, 33, 44, _____, 99, _____

b. _____, 110, _____, _____, 55, 66, _____

3 Look at the completed number sequences in question 2.

a. What patterns do you notice in the 11-times table?

b. Explain why these patterns happen.

4 Can you find **all 23 division facts** based on the 11-times table? Record them on a separate piece of paper. Here are two to get you started:

$11 \div 1 = 11$ $11 \div 11 = 1$

5 Maya is thinking of a number. She multiplies it by 11, adds 11 to the answer and then divides the new answer by 11. The final answer is 11. What number did Maya start with?

Hint: Find the starting number by using inverse operations and working backwards.

Maya started with the number _____

6 Roll 2 6-sided dice and find the total of the 2 numbers. Multiply this total by 11. The first person to call out the correct answer wins 1 point. Who is the first to get 11 points?

Encourage children to use a separate piece of paper if they need to.

Children can draw pictures and record their working here.

Using easy-to-access resources, children gain further practice at home or away from their desks.

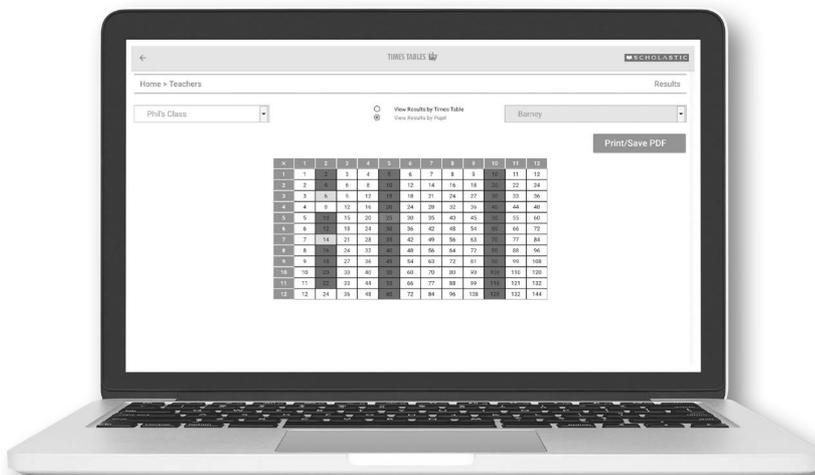
Digital

Additional materials for this book can be found online at the following address:

www.scholastic.co.uk/timestables-resources these include:

- resource pages including games and worksheets
- supporting PowerPoint digital files for display during your classroom teaching
- quick-fire written tests for additional practice or homework. These tests have three levels of differentiation and are aligned with a unit or group of units from the *Teacher's Book*. Assign one of the three sections at a time and progress through them in order.

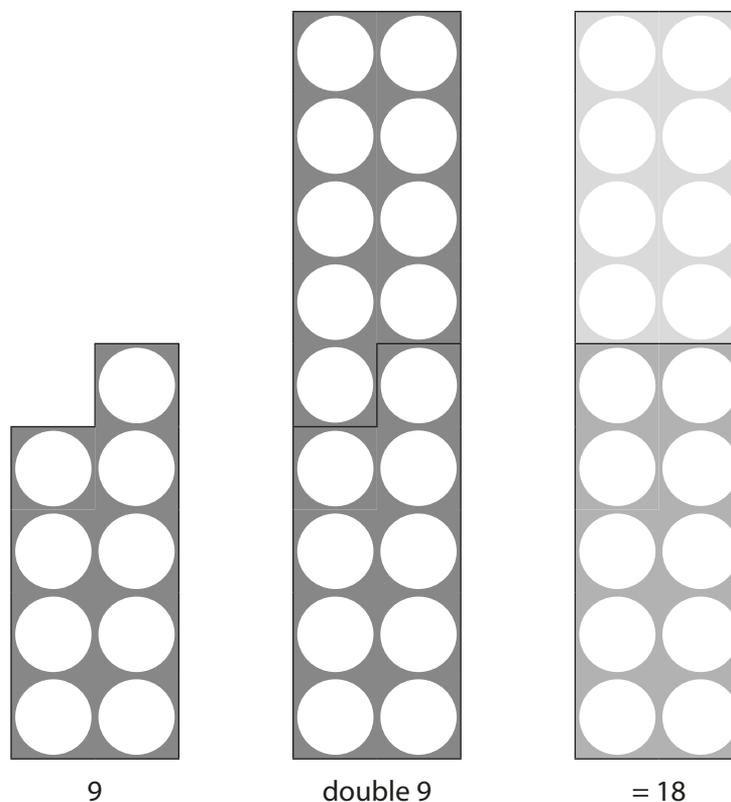
If digital files are required, they will be listed in the 'You will need' section at the start of an activity. Look for the digital icon  for activities using digital content.



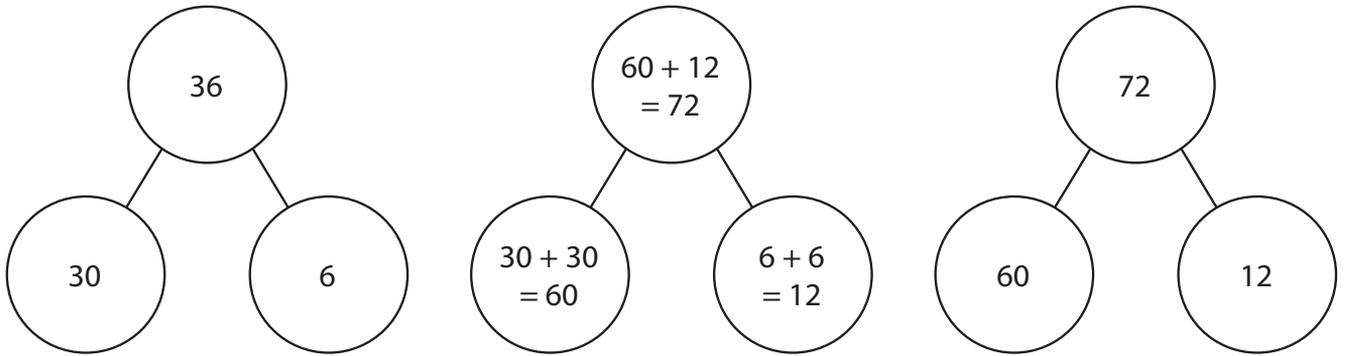
MULTIPLICATION STRATEGIES: DOUBLING

Doubling uses children's knowledge of the 2-times table. Doubling can be used to relate the 'foundation' multiplication facts (from the 2-, 5- and 10-times tables) with other multiplication facts and, therefore, it is a key skill for children to maintain.

Doubling can be represented in many ways, including arrays. Number blocks are useful for helping children to understand and visualise why the answer to double a number is always even (as odd + odd = even).



Children can also use part-whole models and partitioning to help them to double larger numbers. For example the part-whole model below can be used to help children double 36.



Activity	Objective	Focus	Organisation	Development
Doubling train (p17)	Connect the 2, 4 and 8 multiplication tables through doubling (Year 3)	Developing fluency in repeatedly doubling single-digit numbers	Groups of 3	Fluency
Double bingo (p17)		Doubling numbers up to 25	Whole class or group	Fluency
Double trouble (p18)		Developing fluency in repeatedly doubling single-digit numbers	Groups and pairs	Reasoning

Assessment

Use these questions or similar to help you assess children's understanding during and after these activities.

- How quickly can you write down the doubles for all numbers from 0 to 10?
- Can you complete the gaps in this doubling sequence? 1, 2, , , 16, , 64
- Lily says that doubling is linked to the 2-times table. Is she correct?

CRAZY 8s

You need: a polyhedral dice (12-sided ideal, but 10-sided will also work)

STEPS

- Organise the children into pairs.
- Children take it in turns to roll the dice. They then race to call out the answer to the number rolled multiplied by 8.
- The child who calls out the answer first gets 1 point (providing their partner agrees that their answer is correct).
- If the child who answers first makes a mistake, and their partner can give and explain the correct answer, their partner gets the point.
- Draw out the methods children are using by asking: *How did you work out the answer? What facts and knowledge did you use to help you?*
- The winner is the first player to get 10 points.



EXTEND

Increase the number of children playing together. This tends to increase the speed of the game and therefore challenges the players' speed of recall.

2s AND 8s



You need: digital file 4 (2s and 8s)

STEPS

- Organise the children into small groups.
 - Display digital file 4 (2s and 8s). Read out the statement: *I think I can use the 2-times table to work out the answers to the 8-times table.*
 - Invite the children to discuss this with the members of their group. Bring the class back together and share some of the key ideas from each group.
- Ask: *Do you think the statement is correct? How do you know?*
- Once the children have established that there may be a link between the 2- and 8-times tables, ask: *Is this link always true or only sometimes true?* Invite them to investigate this by writing the 2- and 8-times tables alongside each other (for example by writing:
 $1 \times 2 = 2$ next to $1 \times 8 = 8$
 $2 \times 2 = 4$ next to $2 \times 8 = 16$
 and so on).
 - Discuss children's thinking with them, establishing that the 2-times table is linked to the 8-times table by multiplying each number in the 2-times table by 4, or by doubling and doubling again.

EXTEND

Give the children a number statement in which you multiply a number greater than 12 by 2 (for example 16 multiplied by 2 is 32). Ask the children to work out the same number multiplied by 8.