Lesson Printables

Be a rockstar and only print what you need!

Planners: 2-3

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**Printing in the US? Scale to 'fit to printable area' in order to get the best print.*

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LESSON 1: Multiplication/Division - Calculating using the order of operations

Starter	Main Activity and Input: Applying the four operations and order of operations in a game setting.	Plenary
Symbols and Signs: What does the x and ÷ mean to students? What words can they connect to each symbol? **To support:** 1. Ask students guiding questions. What do students call the answer to a multiplication problem? What do students call the answer to a division question? **To challenge:** 1. Students could show what they know already. What are some 'big' multiplication and division problems they already know how to solve?	*This game-based lesson could be used as a pre-assessment to see where your students are at as far as their understanding of the four operations (especially multiplication and division) and how to apply order of operations rules using PEMDAS. Note, we do not specifically review exponents as they do not apply to the main activity, but you might wish to do so.* **Input:** 1. Slide 6 shows three playing cards. If students must use all three cards and any of the four operations (add, subtract, multiply, divide), what numbers can they calculate? Give students time to explore and share ideas. Do they use the correct order of operations? (*Note, if appropriate you could ask students if they can include negative numbers.)* Slide 7 reveals just a few answers (there are many possibilities). What do students notice? Can they explain the reason for using brackets in some of the number sentences? Review PEMDAS as a class. 2. Slides 7 to 17 model using the four operations to play Castle Capture. Each player takes turns flipping over 3 cards (or dice), creating and solving number sentences and then circling numbers in order to 'claim' a castle. There are 3 levels to this game. Level One: Players MUST use multiplication in their number sentence. ➔ Add or subtract two cards and then multiply the answer by the remaining card. ➔ Multiply two cards and then add or subtract the remaining card. Level Two/Three: *To make this Level 2, students can use dice. Level 3 uses playing cards.* Both levels include using division. Players MUST use multiplication OR division in their number sentence. This means students can use the options from Level One and now also have division options. Players could make a variety of different numbers depending on what cards are flipped over. On slides 13 and 15 we have modelled some potential number sentences students could use. *Note, some number sentences are not applicable due to the numbers that are flipped over or rolled.* 3. Once students have an answer they would like to use, they should draw a circle around their answer or place a counter near it in order to 'claim' it on the game board. If any player claims 3 numbers on the same castle, they get to capture or claim it. This can be shown by putting a counter on the castle or circling it. Once a castle has been claimed, it is not longer in play. - If you get a number that someone has already claimed, you can bump them off and put your counter on the number. - The player with the most castles when time is called is the winner. **Activity: Play Castle Capture.** 1. Print out rules and castles for each learning zone. This game could be played as a 2 or 3 person game. (See printables for boards and instructions.) It might be helpful to put the castle page in a plastic pocket. Students could circle the numbers they have claimed using whiteboard pens, so they can easily erase the 'board' when they have finished a game and can start again. **To support:** 1. Provide students with a times table toolkit to help them remember multiplication strategies. (See printables.) 2. Students could play just Level One which involves multiplication, addition and subtraction. 3. Students could play both game levels but use dice instead of playing cards in order to keep numbers smaller. **To challenge:** 1. Encourage students to record their number sentences. 2. Students could play more than one game level. 3. Students could change the rules of the game so that they have to claim more than 3 numbers in order to earn a castle.	**Tips and Tricks:** What tips and tricks do students have for multiplying/dividing by 2, 3, 4, 5, 6, 7, 8 and 9? Share ideas as a class. **Possible talking points:** (through mainly a multiplication lens) - 4 times table is double the 2 times table. - 8 times table is double the 4 times table. - 5 times table is half the 10 times table. - 6 times table is double the 3 times table. - 9 times table is 1 group less than the 10 times table.

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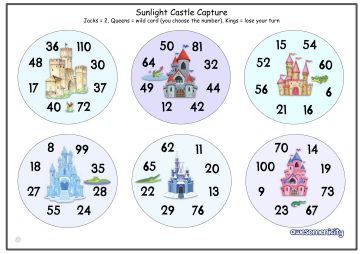
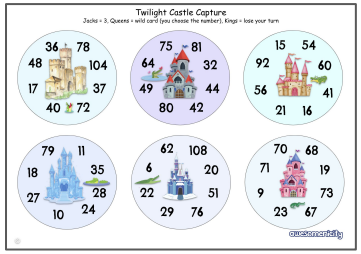
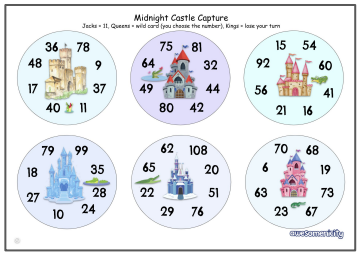
Things that might be useful for this lesson:

- Individual whiteboards:
  - ➔ Help students to record their thinking and share ideas with others.
- 100s chart:
  - ➔ Help students to skip count.
- Counters/blocks:
  - ➔ Helps students to make equal groups.
- Times Table Toolkit:
  - ➔ For students to refer to for specific multiplication strategies.

Peek at the Printables:

Sunlight Zone	Twilight Zone	Midnight Zone
		

Greener Alternatives:

- ➔ Students could draw their own Castle Capture boards using amounts that you assign or you could draw them outside using chalk.
- ➔ You could skip printing the rules or display a copy for students to refer to if needed.

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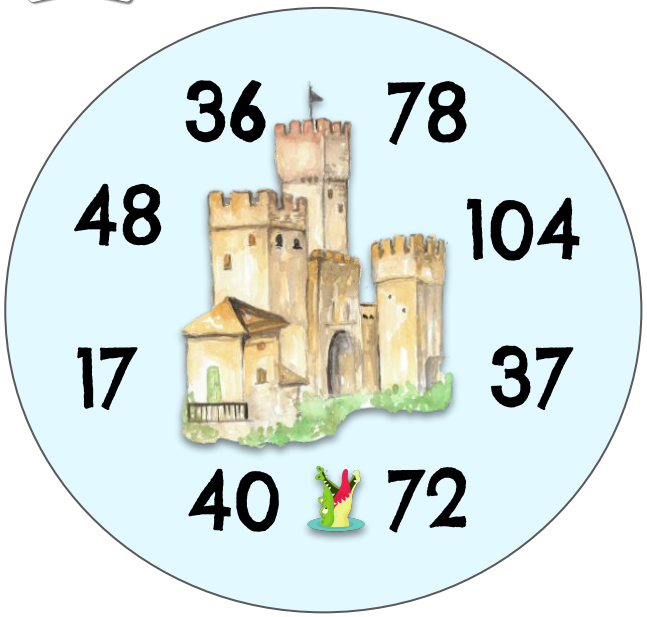
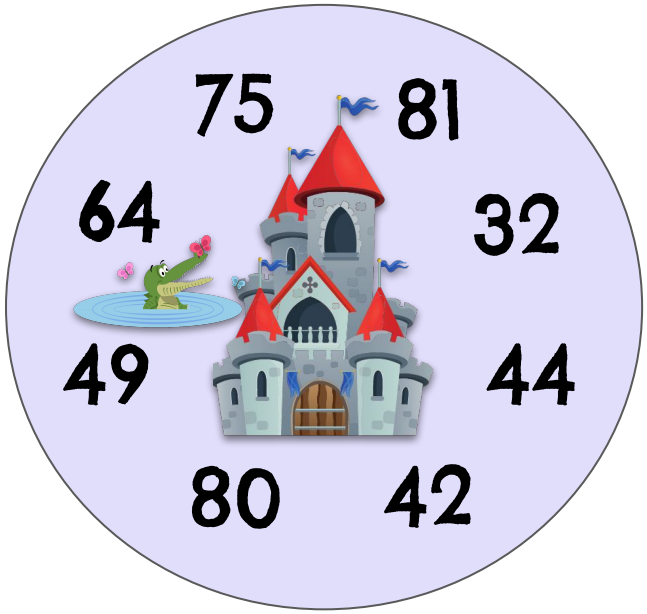
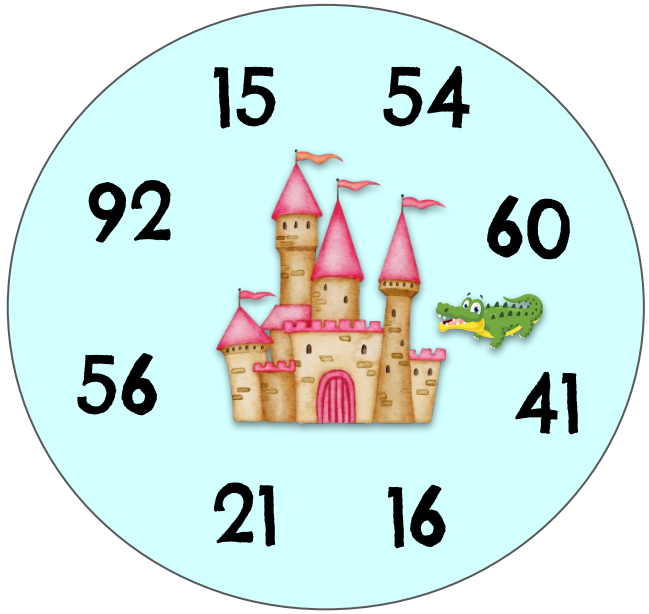
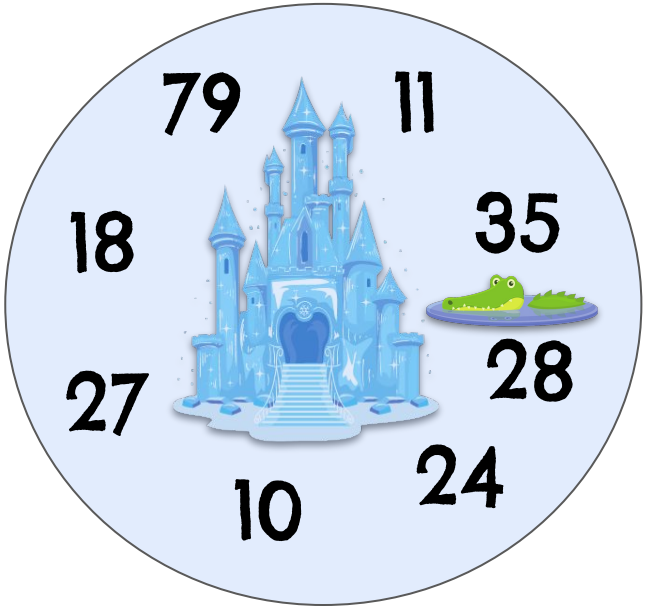
Level One

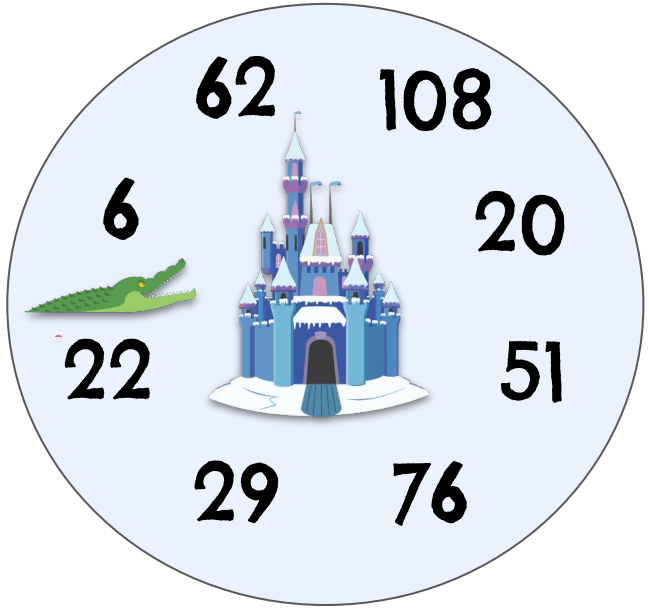
Jacks = 11, Queens = wild card (you choose the number), Kings = lose your turn

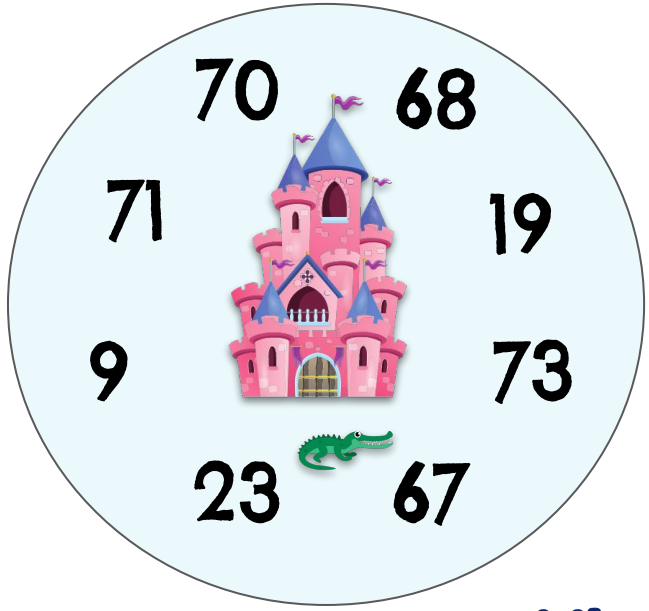












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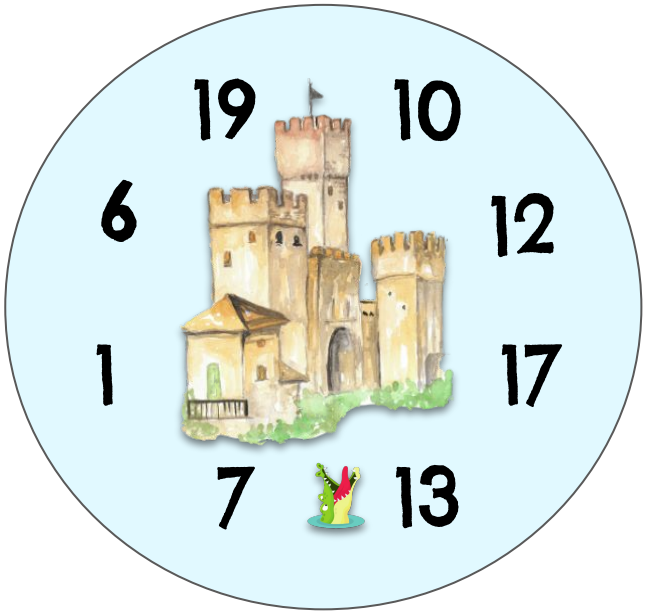
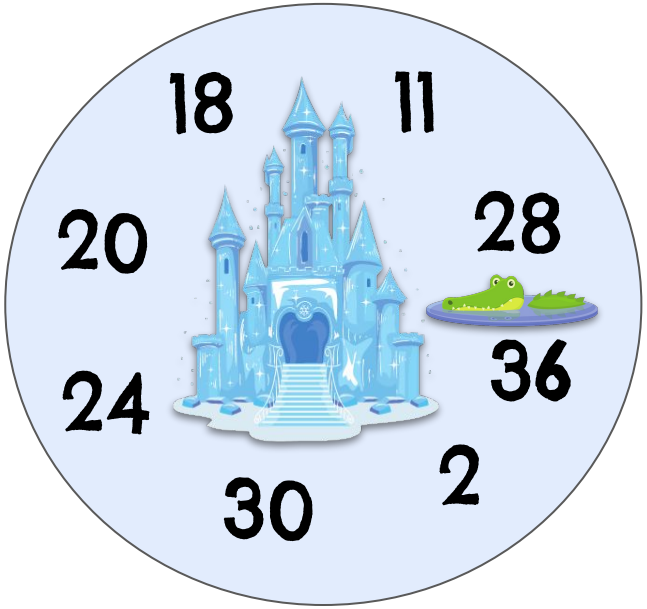
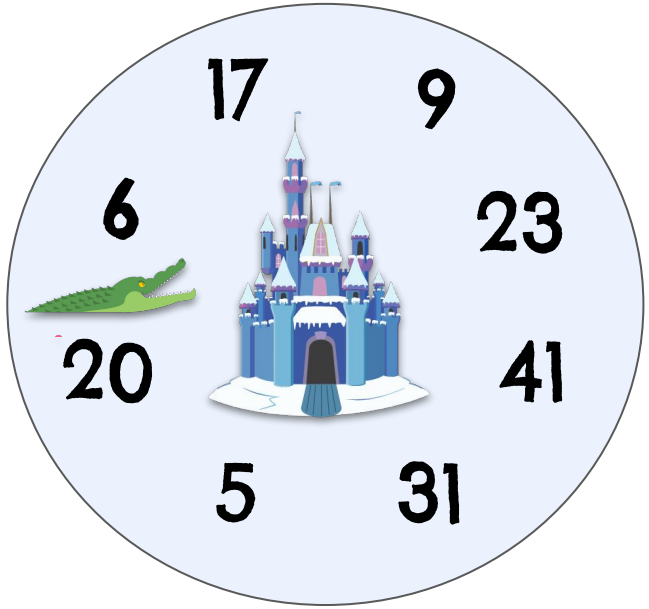
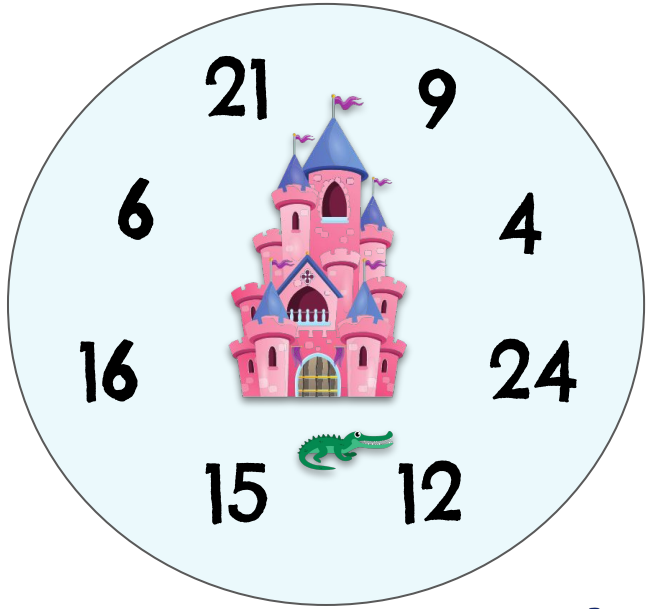
Level Two (with dice)









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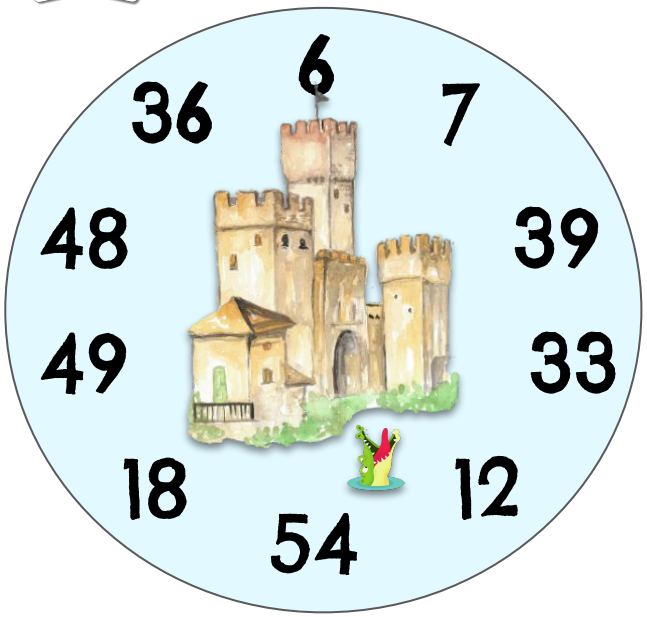
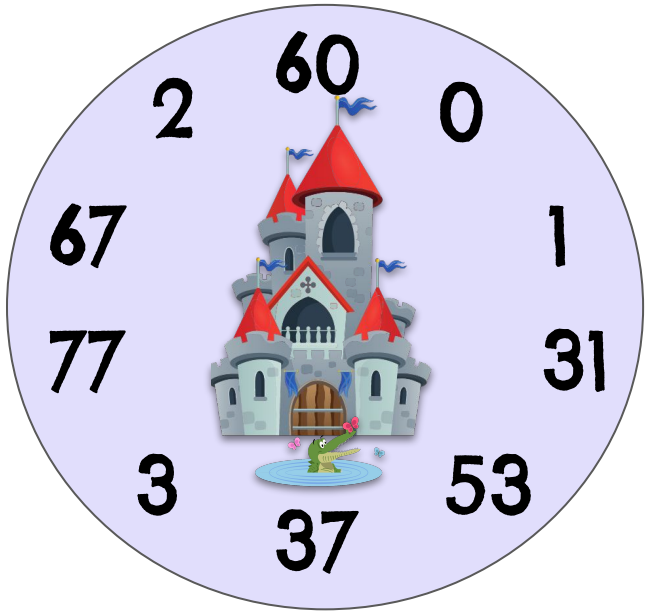
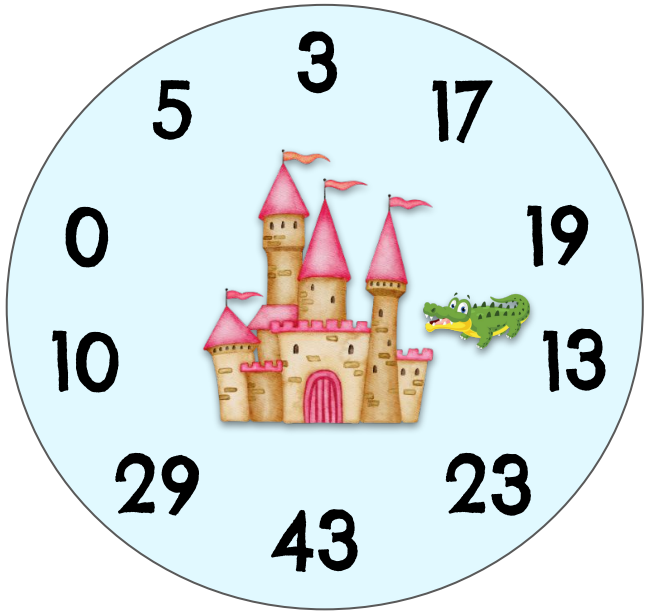
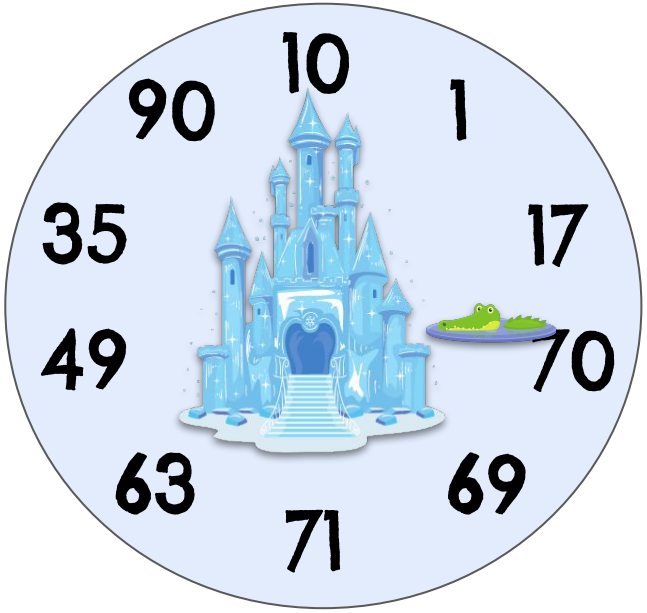
Level Three (with cards)

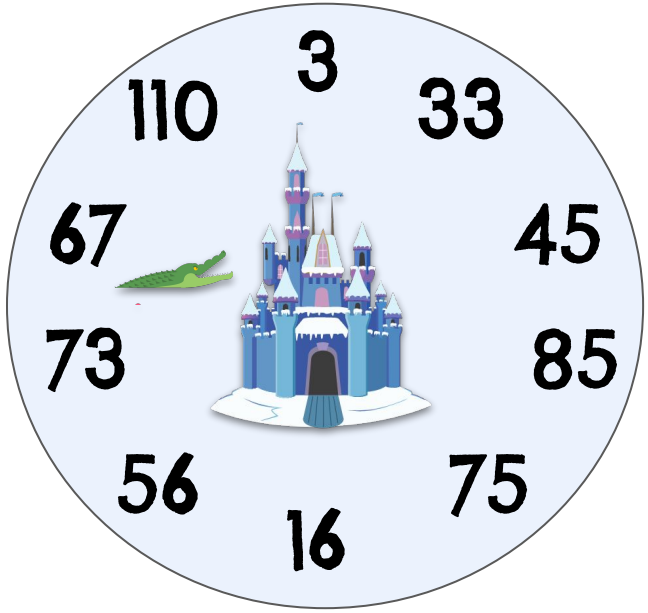
Jacks = 11, Queens = wild card (you choose the number), Kings = lose your turn

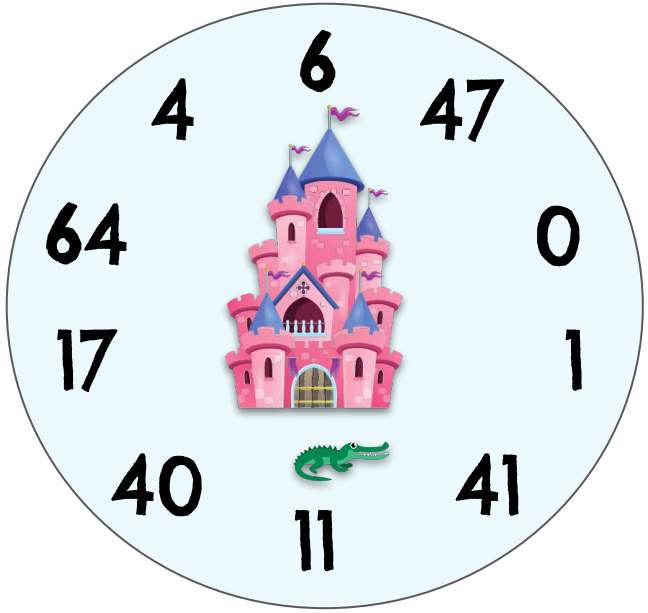












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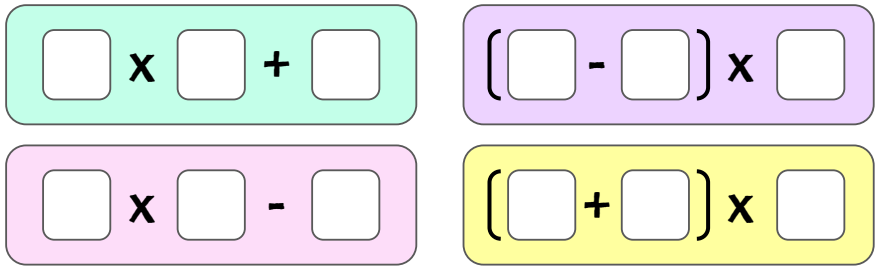
Castle Capture Level One

1. Players take turns flipping over 3 cards.
   - ➔ Jacks = 11
   - ➔ Queens - wild (you pick the number)
   - ➔ Kings - lose your turn.
2. You have 4 options. Pick one!



3. Put a counter on or circle your answer.
4. If you get 3 counters/circles on a castle, you can claim the castle.
   - ➔ This means it is now yours and is out of play for the rest of the game.
5. If a player gets an answer that already has a counter/circle on it, they can bump the other player's counter off and place their counter on it or circle it.
6. The player with the most castles when time is called is the winner.
   - ➔ If both players have the same number of castles, pick a 'crown jewel'. This is one number on the board. The first player to get that number wins.

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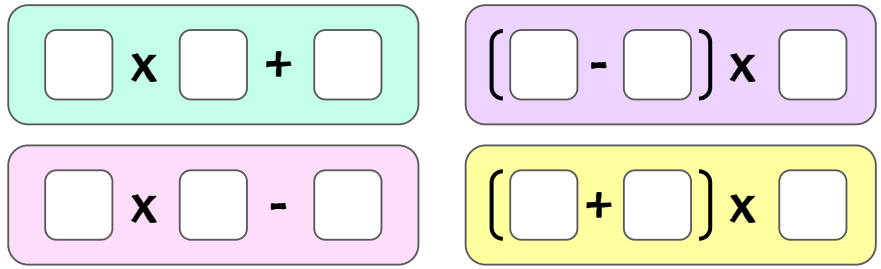

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Castle Capture Level Two

(with dice)

1. Players take turns rolling 3 dice.
2. You have several options.
   - ➔ You MUST use multiplication OR division in your number sentence.
     - ◆ You can use both.
   - ➔ You must use all 3 dice.
   - ➔ You can also use addition and subtraction.
3. Put a counter on or circle your answer.
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Castle Capture Level Three

(with playing cards)

1. Players take turns flipping over 3 cards.
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   - ➔ Queens - wild (you pick the number)
   - ➔ Kings - lose your turn.
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   - ➔ You MUST use multiplication OR division in your number sentence.
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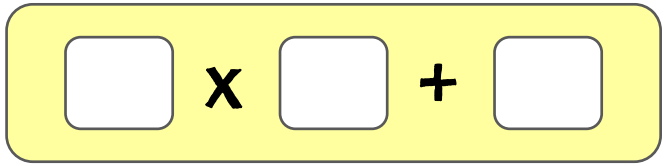
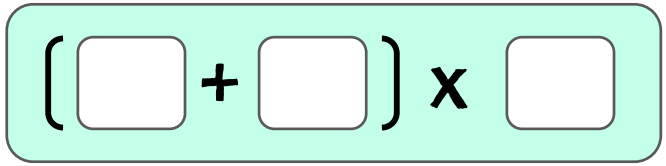
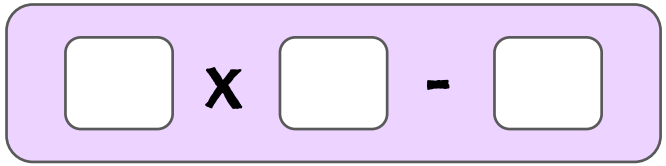
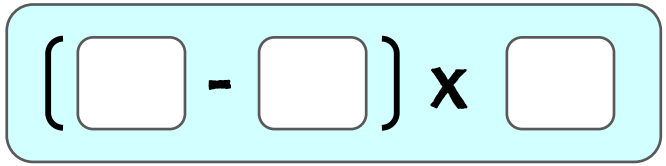
Multiplication Options

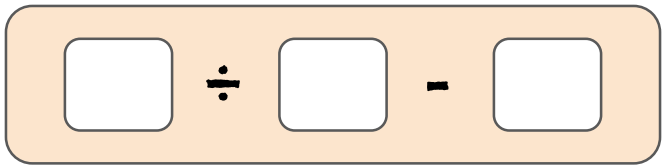


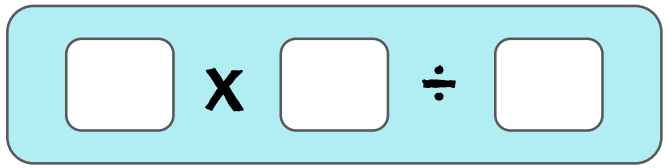


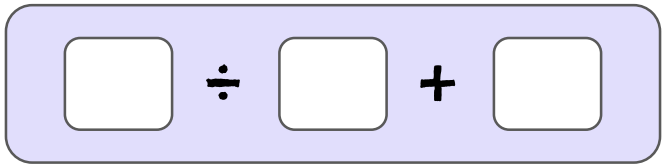


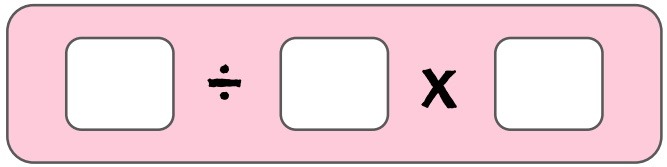


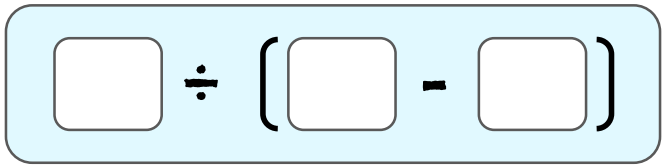
Division Options

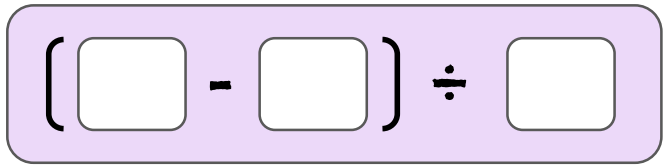


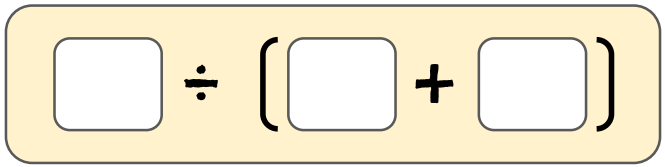


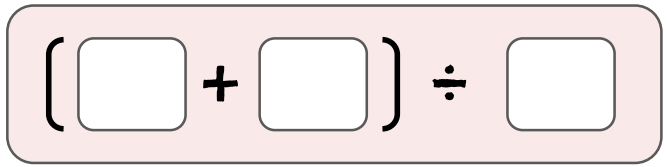












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Recording Logs

Numbers Sentence	Answer

Numbers Sentence	Answer

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Times Table Toolkit

x2	Double the other number.
x3	Multiply the other number by 2 and add 1 more group.
x4	Double the other number and double your answer.
x5	Multiply the other number by 10. Halve the product.
x6	Multiply the other number by 5 and then add 1 more group.
x7	Look at the other number and use its times table strategy.
x8	Multiply the other number by 2, double your answer and double it again.
x9	Multiply the other number by 10 and subtract 1 group from your answer.
x10	Count in 10s.

Times Table Toolkit

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100s Charts

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

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