

Lesson Printables

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Planners: 2-3

Rules

Sunlight/Twilight: 4

Midnight: 5

Extras

Recording Logs: 6

Subtraction Placemat: 7

Midnight Placemat: 8

Ten Frames: 9

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

LESSON 1: Subtraction - Number bond connections

Starter	Main Activity and Input: Subtracting amounts from 10 to secure number bonds and make connections.	Plenary
<p>Winter Preps: How many nuts could be behind the snowflake? What number sentences will help students work this out?</p> <p>To support:</p> <ol style="list-style-type: none">1. Have students draw nuts on a whiteboard. If they know how many nuts are in each row and column, what would the picture look like? <p>To challenge:</p> <ol style="list-style-type: none">1. How many different ways can 12 be grouped equally? What if there were 18 nuts? 24 nuts?	<p>Input:</p> <ol style="list-style-type: none">1. Slide 6 shows lots of rubber ducks. How could they be paired up using number bonds to ten? Ask students to share their ideas on the board. Slide 7 shows grouping the ducks using number bonds to 10. Recap each number bond pairing. You could shout out a number and have students ‘pop’ up out of their chairs to shout the number bond as a little recap activity. If needed, students could use ten frames at the start of the lesson to help them visualise making 10.2. Slide 8 shows the plus and minus signs. What do these symbols mean? Discuss as a class. Elicit from students that when you add, your answer is bigger than the two starting numbers. When you subtract or take away, your answer is smaller than the first number in your number sentence.3. Slide 9 to 20 model the main activity: playing Subtraction Pyramid. (This is a collaborative game.)<ul style="list-style-type: none">- Lay out cards in pyramid formation.- Players take turns flipping over 1 card and subtracting it from 10.- If the answer is a ‘free card’ (that means it doesn’t have other cards on top of it), you can take away the card and keep it. Put the other card in a discard pile.- Player 2 repeats this process.- If you can’t get a ‘free card’, you get a skull and crossbones. (This just means your turn is over.)- The goal is to try to take away all of the cards from the pyramid before the deck runs out. Note, this becomes harder the closer you get to the top of the pyramid.- Aces = 1 and Jacks, Queens and Kings are special cards. They can become any number the players want.4. Throughout the lesson we model taking amounts away from a ten frame. Students should not be limited to this strategy as some will be able to solve 1-digit subtraction problems within 10 mentally. <p>Activity: Play Subtraction Pyramid.</p> <ol style="list-style-type: none">1. Print the rules for each learning zone. Students will also need playing cards.2. Recording logs can be found in the printables. <p>To support:</p> <ol style="list-style-type: none">1. Print number mats to help students physically build their number sentences with playing cards.2. Allow students to work with 10 place value blocks or counters so they can physically take away amounts. You could also use the ten frames found in the printables. <p>To challenge:</p> <ol style="list-style-type: none">1. Encourage students to write a ‘something else I know’ statement in order to reinforce bigger number bond connections. For example, if I know $10 - 6 = 4$, I also know $20 - 6 = 14$, etc.2. Note, for Midnight Zone, have students flip over a card and place it to the left of a 0. They will always be taking away a 1-digit number from a multiple of ten. Next, students flip over a new card to subtract from the multiple of ten. Students should say their answer out loud and take away a free card that matches the digit in the ones column of their answer. For example, if a player’s first card is a 7, the bigger number in their number sentence would be 70. If they flip over a 9 as their second card, their number sentence would be $70 - 9$. The answer is 61, so the player could take an Ace away from the pyramid if it is free.3. For students who need more challenge, they could flip over 3 cards to make a 2-digit minus 1-digit number sentence. They could take away any free card on the pyramid that matches the ones in their answer.	<p>Flip or Flop:</p> <p>What cards does the dog want to flip in order to tackle the pyramid?</p> <p>Check for understanding:</p> <ol style="list-style-type: none">1. Can students write a correct order for what cards would make the dog successful? E.g. 3, 1, 4 and 2.

Things that might be useful for this lesson:

- Individual whiteboards:
 - Help students to record their thinking and share ideas with others.
- Ten frames:
 - Help students to visually make number bonds to ten.
- Subtraction mats:
 - Help students to organise their number sentences.

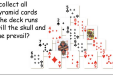


Peek at the Printables:

Sunlight/Twilight

Sunlight/Twilight Subtraction Pyramid

1. Make your subtraction pyramid.
 - It should have 3 rows.
 - Put the remaining cards in a pile face down.
2. Players take turns flipping over 1 card from the pile.
3. Subtract that number from 10.
 - If the answer is a free card, with nothing on top of it, you can take the card away from the pyramid and keep it.
 - If a free card isn't available, you get a skull and crossbones and your turn is over.
4. If you flip over a Jack, Queen or King, you can make the card turn into any number you want.
 - If a Jack, Queen or King is in your pyramid, it can become any number you want.
5. Can you collect all of the pyramid cards before the deck runs out, or will the skull and crossbones prevail?



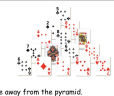
Midnight

Midnight Subtraction Pyramid

1. Make your subtraction pyramid.
 - It should have 3 rows.
 - Put the remaining cards in a pile face down.
2. Players take turns flipping over 2 cards from the pile.
 - Put a 0 on the end of one of your cards.
 - Subtract the other card from your 2-digit number.
 - ♦ E.g. 70 - 8 = 62.
 - ♦ The ones digit in your answer is the card you can take away from the pyramid.
 - ♦ E.g. Take a 2 away from the pyramid if it is free.
 - You get to choose how you use your cards.
3. If a free card isn't available, you get a skull and crossbones and your turn is over.
 - ♦ E.g. If you flip over a 7 and an 8, your number sentence could be 70 - 8 = 60 - 7.
4. If you flip over a Jack, Queen or King, you can make the card turn into any number you want.
 - If a Jack, Queen or King is in your pyramid, it can become any number you want.
5. Can you collect all of the pyramid cards before the deck runs out, or will the skull and crossbones prevail?

Your card **0** - Your card = Answer:

Take the card with the pyramid

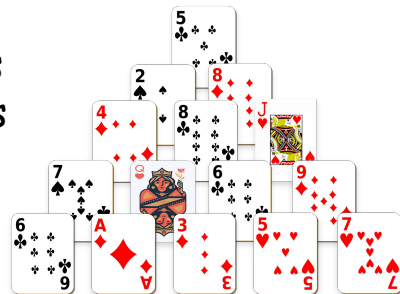


Greener Alternatives:

- Print a copy of the rules to display around the class. Students can refer to them if needed.
- Students could use cards and dice to make subtraction number sentences rather than playing the game.

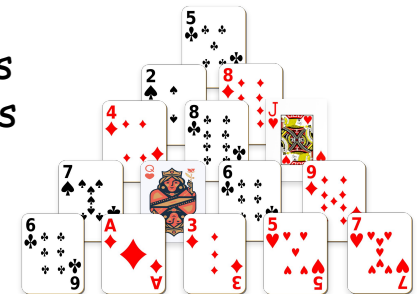
Sunlight/Twilight Subtraction Pyramid

1. Make your subtraction pyramid.
 - It should have 5 rows.
 - Put the remaining cards in a pile face down.
2. Players take turns flipping over 1 card from the pile.
3. Subtract that number from 10.
 - If the answer is a 'free card' with nothing on top of it, you can remove the card from the pyramid and keep it.
 - If a free card isn't available, you get a skull and crossbones and your turn is over.
4. If you flip over a Jack, Queen or King, you can turn the card into any number you want.
 - If a Jack, Queen or King is in your pyramid, it can become any number you want.



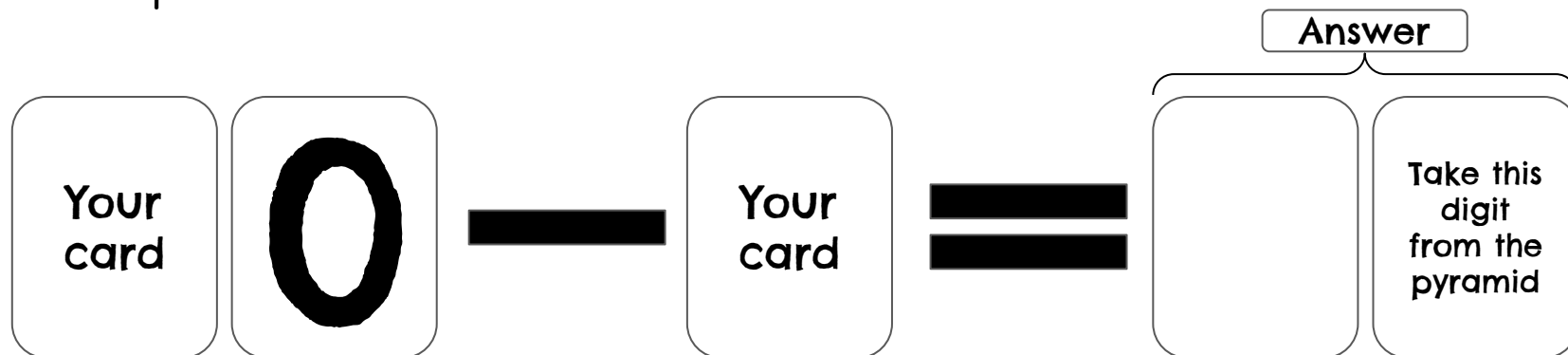
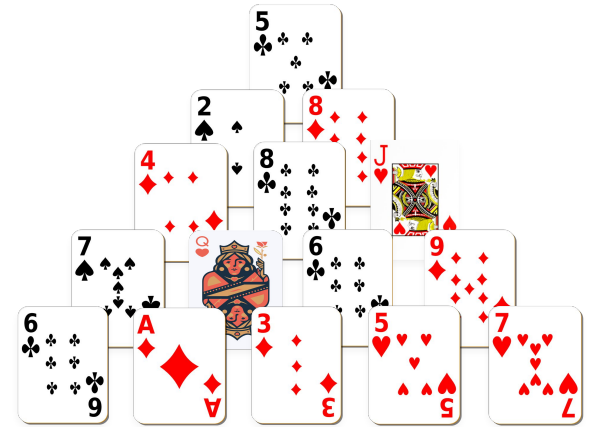
Sunlight/Twilight Subtraction Pyramid

1. Make your subtraction pyramid.
 - It should have 5 rows.
 - Put the remaining cards in a pile face down.
2. Players take turns flipping over 1 card from the pile.
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 - If the answer is a 'free card' with nothing on top of it, you can remove the card from the pyramid and keep it.
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 - If a Jack, Queen or King is in your pyramid, it can become any number you want.



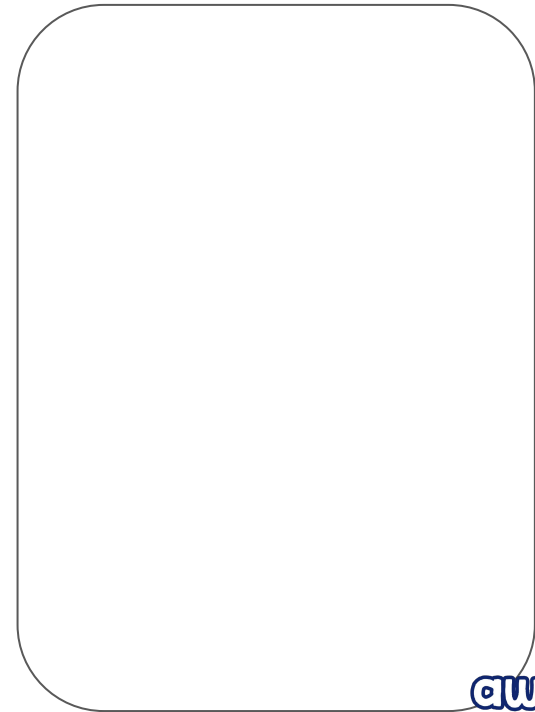
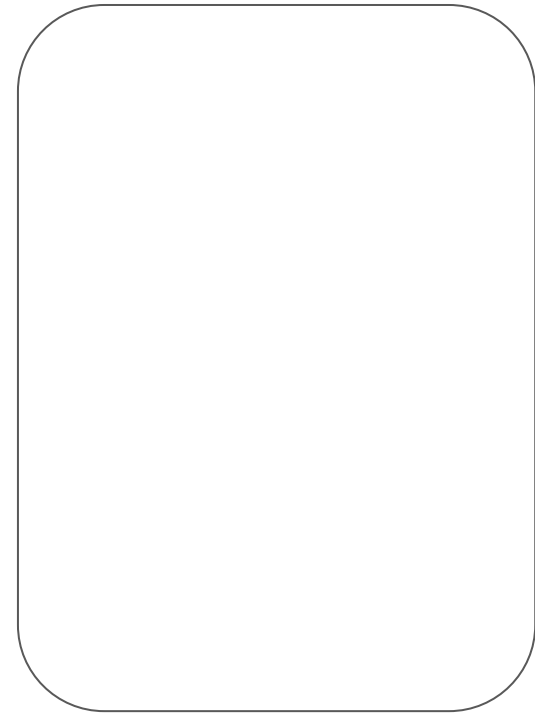
Midnight Subtraction Pyramid

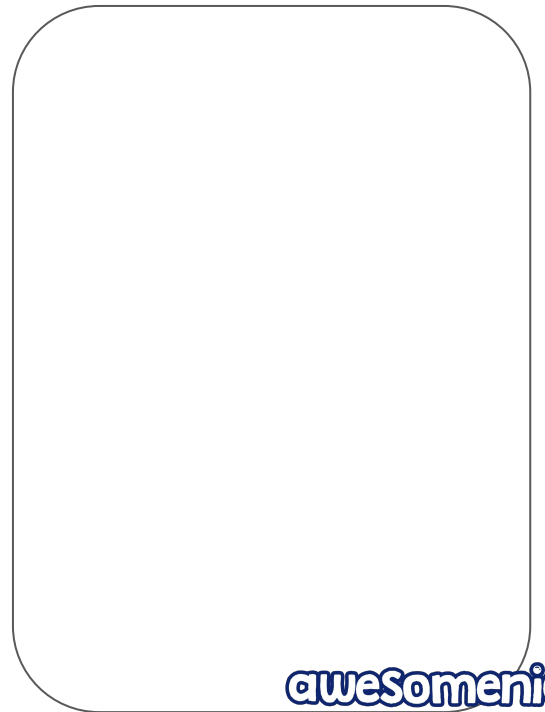
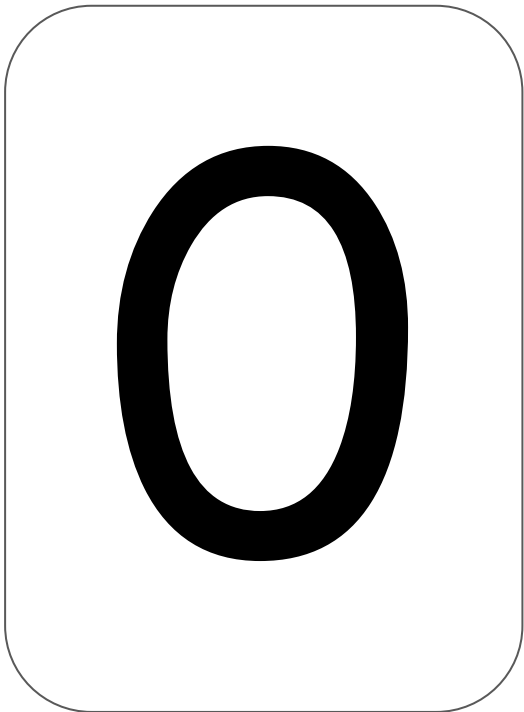
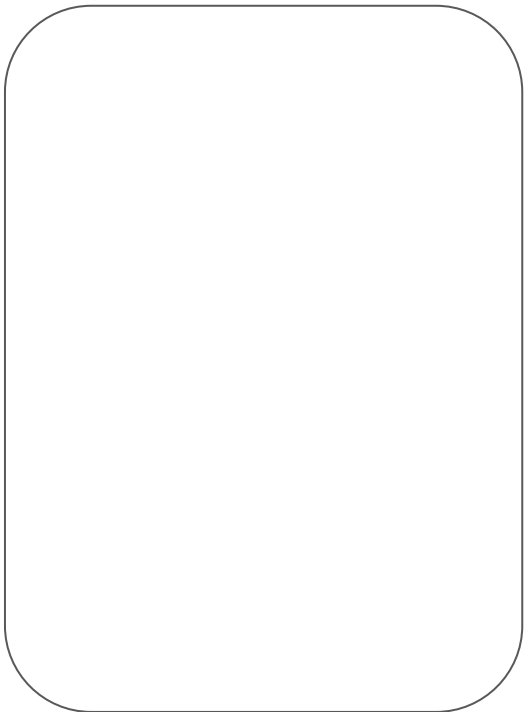
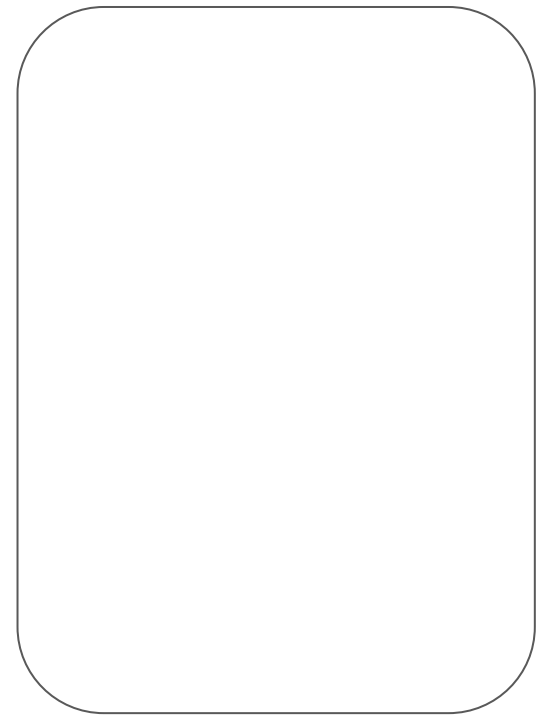
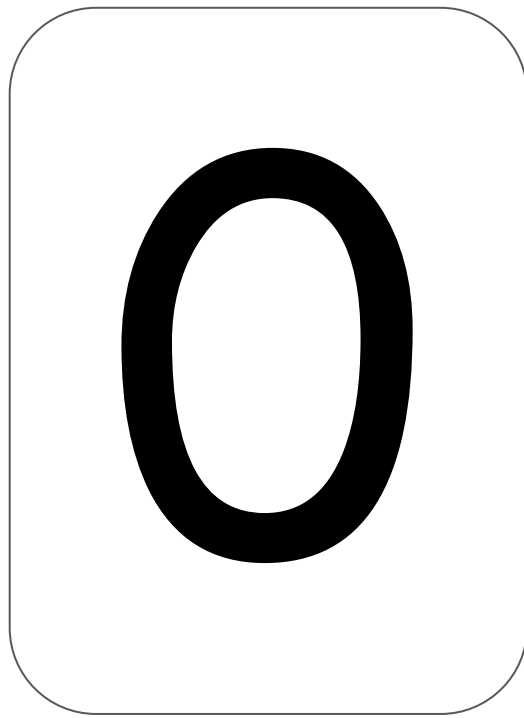
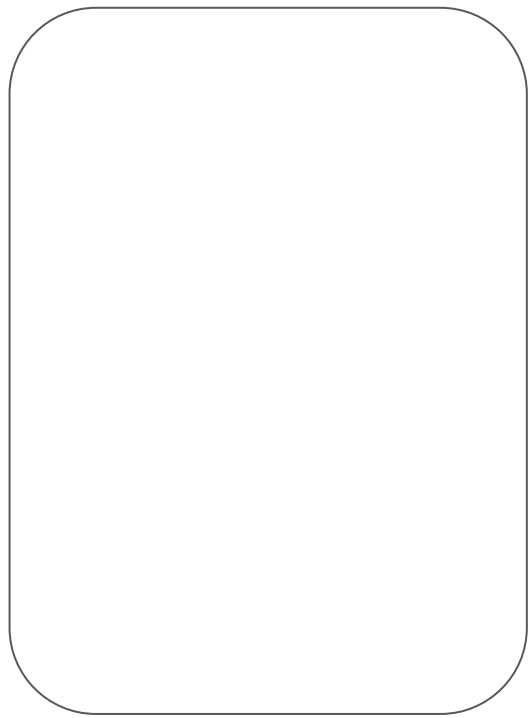
1. Make your subtraction pyramid.
 - It should have 5 rows.
 - Put the remaining cards in a pile face down.
2. Players take turns flipping over 2 cards from the pile.
 - Put a 0 on the end of one of your cards.
 - ◆ A 7 could become 70.
 - Subtract the other card from your 2-digit number.
 - ◆ $70 - 8$
 - ◆ The ones digit in your answer is the card you can remove from the pyramid.
 - $70 - 8 = 62$, so you would remove a 2 from the pyramid if it is free.
 - You get to choose how you use your cards.
 - ◆ If you flip over a 7 and an 8, your number sentence could be $70 - 8$ or $80 - 7$.
3. If a free card isn't available, you get a skull and crossbones and your turn is over.
4. If you flip over a Jack, Queen or King, you can turn the card into any number you want.
 - If a Jack, Queen or King is in your pyramid, it can become any number you want.
5. Can you collect all of the pyramid cards before the deck runs out, or will the skull and crossbones prevail?



Recording Logs

Number Sentence	Something else I know...	Number Sentence	Something else I know...





Ten-Frames

