



SAVE SANTA'S WORKSHOP

Preparation

- Print the clue pages, i.e. the five different rooms/locations. Three copies of each works best for a full class, if students are working in pairs.
- Print a Workshop Induction Booklet for each student or pair. Print each book double-sided, flipping on the short edge.
- Differentiated versions of the Induction Booklet are available if needed to suit individual students' abilities. They are levelled as follows:
 - circle - two-digit addition, one-digit multiplication/division
 - triangle - two- and three-digit addition, one-digit multiplication/division, knowledge of mixing primary colours
 - pentagon - the above, plus order of operations, multiplying numbers by 100, knowing what the term 'product' means when performing an operation.
- Cut out the rotating sections for the Candy Cane Chute (on page 4) and attach them to the page using a split pin.
- Cut out the tokens for the Reindeer Stables (on page 5).

Optional preparation

- Cut out the notes. Distribute to certain students to create a shared reading of the introduction.
- Put Note 2 in an envelope and place at the front of the classroom for a student to find and read later.

Implementation

- Place the clue pages around the room. Group the copies of the same page together.
- On a screen in the classroom, display the first slide of the Save Santa's Workshop PowerPoint in Slide Show mode.
- Read through the introduction as a class using the cut-out notes. Alternatively, the teacher could read the whole introduction on the following page.
- Click the 'Begin' button to display the keypad students will use to escape.
- Distribute the Induction Booklets and have students begin the activity.
- When students are ready to unlock the vault, they enter the combination and click the tick button.



Introduction

Note 1 The festive season is fast approaching, and we are all getting excited about holidays with family and friends. During what seems to be a usual lesson, we notice an envelope on the board addressed to our class.

Note 2 Dear students,

The North Pole Workshop is in trouble and needs your help.

Please see the attached notes and act upon them urgently.

All the necessary documents have already been sent to your classroom.

Kind regards,

Twinkle McJingles

Head Elf at the North Pole Workshop

Note 3 The situation at the North Pole is becoming very urgent. Santa has forgotten the combination to the vault of toys! All year the workshop has been busy making gifts and safely storing them in the vault, ready for Christmas. If the vault stays locked, then there will be no presents!

Note 4 The combination has always been top-secret, with Santa being the only one who knows it (well, knew it). There are whispers of some clues hidden in the Induction Booklet for the North Pole Workshop. Maybe there is a way to discover the combination and save Christmas!

Teacher Ok, it looks like it is up to us to help find the combination to the vault of toys and save Christmas! There are five locations that you will need to visit, and you can do this in any order you wish. Make sure to read the clues carefully and take your time with any calculations. Each location will result in a number. Once you have all the numbers, you can add them together to determine the combination to the vault. Good luck!

Cut-outs (Notes)

The festive season is fast approaching, and we are all getting excited about holidays with family and friends. During what seems to be a usual lesson, we notice an envelope on the board addressed to our class.

1

Dear students,

The North Pole Workshop is in trouble and needs your help.

Please see the attached notes and act upon them urgently.

All the necessary documents have already been sent to your classroom.

Kind regards,

Twinkle Mcfingles

Head Elf at the North Pole Workshop

2

The situation at the North Pole is becoming very urgent. Santa has forgotten the combination to the vault of toys! All year the workshop has been busy making gifts and safely storing them in the vault, ready for Christmas. If the vault stays locked, then there will be no presents!

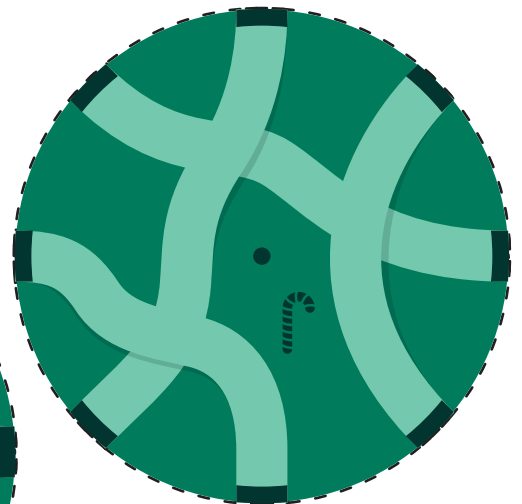
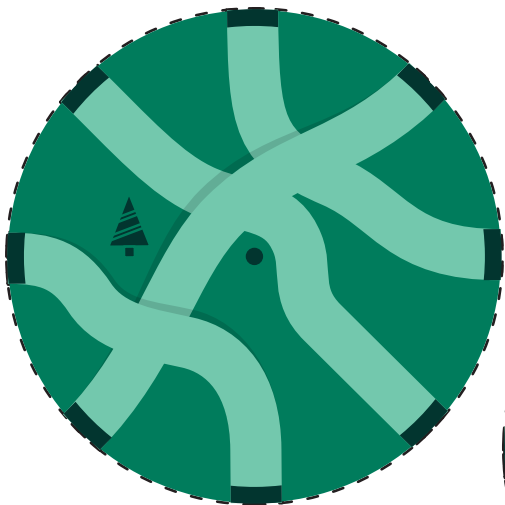
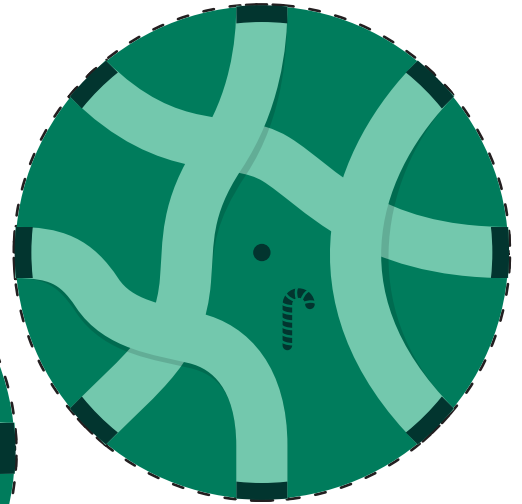
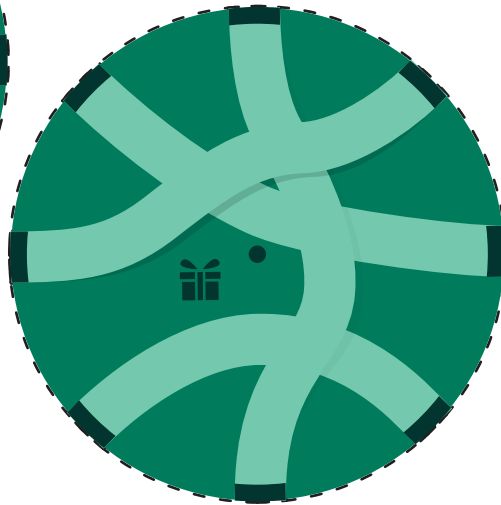
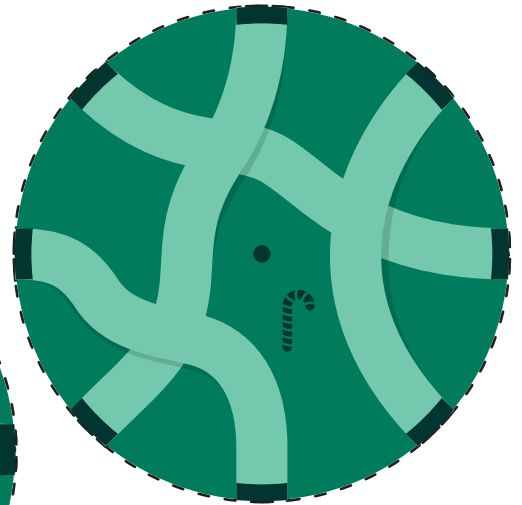
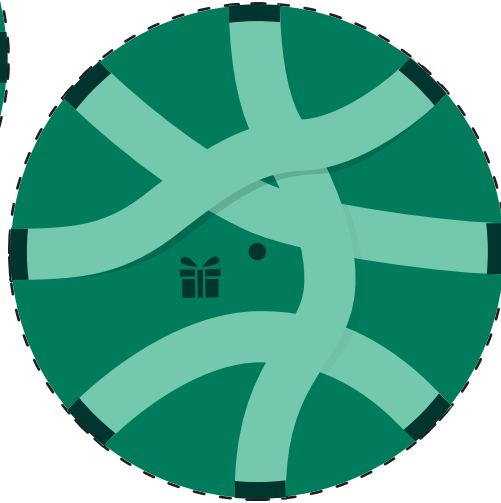
3

The combination has always been top-secret, with Santa being the only one who knows it (well, knew it). There are whispers of some clues hidden in the induction booklet for the North Pole Workshop. Maybe there is a way to discover the combination and save Christmas!

4

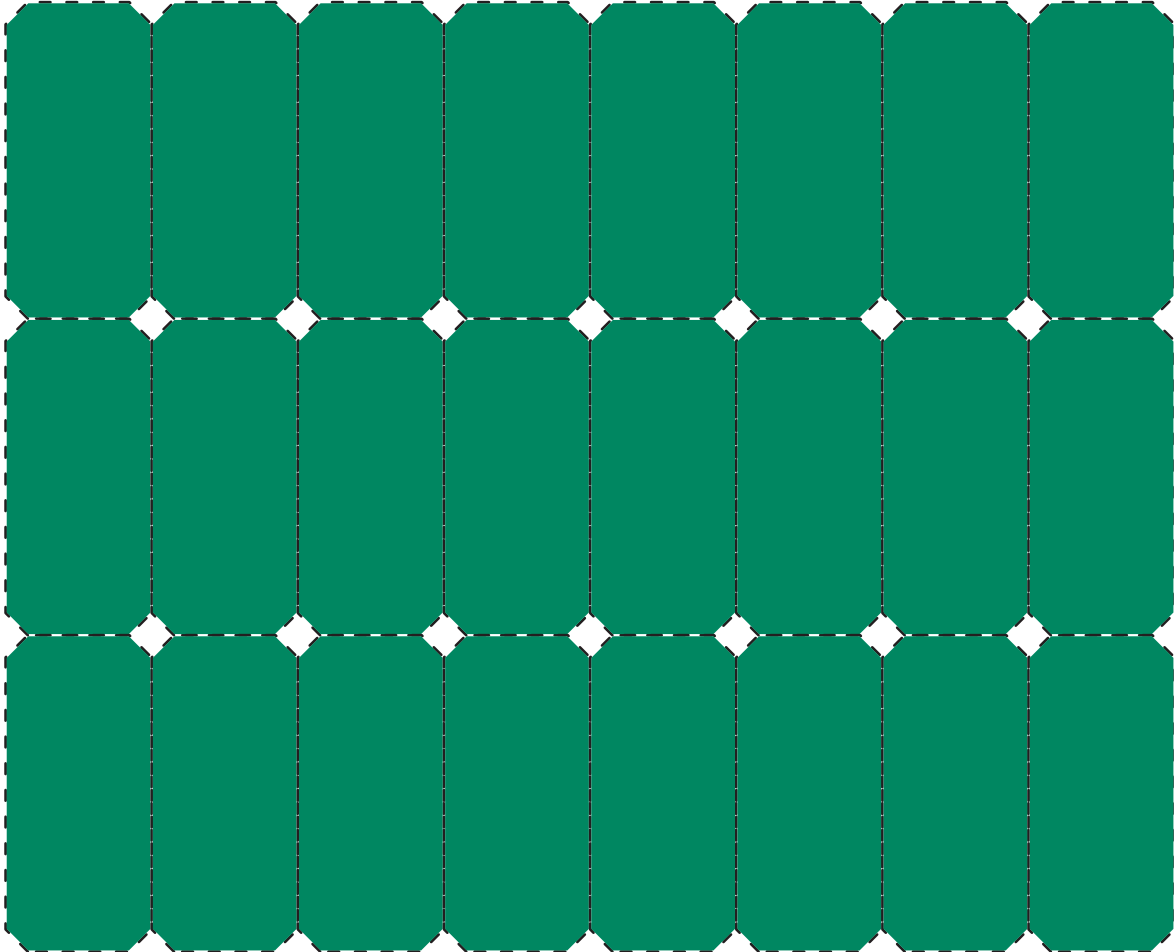
Cut-outs (Candy Cane Chute Rotating Sections)

Each Candy Cane Chute Clue Page needs one set of Rotating Sections. There are multiple sets on this page. If you are only printing one clue page you will only need to cut out one set.



Cut-outs (Reindeer Stable Tokens)

Each Reindeer Stable Clue Page needs eight tokens. This is more than enough to solve the clue. Cut out as many as you need.



The Candy Cane Chutes



B+C+D+F+G



B+C+D+E+F

_____ + _____

_____ + _____ =

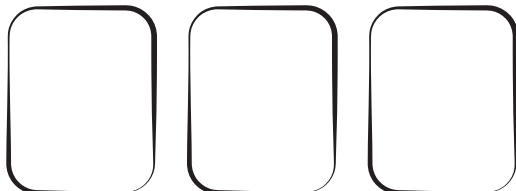
Answer

The Reindeer Stables

- The sound someone makes when they are telling you to be quiet is in this name. _____
- It's so _____!
- Starts with the third letter of the alphabet and has two of the twentieth. _____
- Guides the sleigh at night. _____
- Wrap this around the tree. _____

Answer

Combination



NORTH POLE WORKSHOP

INDUCTION BOOKLET

Name: _____

Welcome to the Workshop

Solve the puzzle in each location to reveal a number. Once you have all five numbers, add them together to reveal the combination to the toy safe!

The Wrapping Room

The first present has spotty paper and a blue ribbon. Its tag is round. The paper colour is the same colour as grass.

The second present has red stripy paper. It has the same colour ribbon and same tag as the first present.

Multiply the two numbers together to find the answer.

$$\square \times \square = \text{Answer}$$

The Assembly Line

The amount of Wood it takes to make two Wooden Cars plus the amount of Wool it takes to make one Teddy Bear.

$$\square + \square = \text{Answer}$$

The Mail Room



$$\text{Answer}$$

The Candy Cane Chutes



A+B+C+F+G



B+C+D+E+G

_____ + _____

_____ + _____ =

Answer

The Reindeer Stables

- Starts with the 22nd letter of the alphabet. _____
- This name contains something that is left over after a fire. _____
- Sparkly string you use to decorate. _____
- This name contains something that holds treasure. _____
- An adjective. _____
- Has a similar letter combination in their name to the reindeer in stable 13. _____

Answer

Combination

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NORTH POLE WORKSHOP

INDUCTION BOOKLET

Name: _____



Welcome to the Workshop

Solve the puzzle in each location to reveal a number. Once you have all five numbers, add them together to reveal the combination to the toy safe!

The Wrapping Room

The first present is red and stripy. Its tag has no corners. The ribbon is the colour you mix with red to make orange.

The second present has a different coloured ribbon to the first. Its paper is the colour of a ripe tomato with the same pattern as the first present. Its tag is the same as the third present.

The third present has a yellow ribbon and a tag that has corners. The pattern on the paper is different to the other presents and is the colour you get when you mix yellow and blue.

Add all the numbers together to find the answer.

$$\square + \square + \square = \text{Answer}$$

The Assembly Line

The amount of Metal it takes to make four Robots plus the amount of Wood needed to make three Wooden Cars.

$$\square + \square = \text{Answer}$$

The Mail Room



$$\text{Answer}$$

The Candy Cane Chutes



$$(A + F) \times (C + E)$$



$$A \times (G + B \times C)$$

$$\begin{array}{r} \underline{\hspace{2cm}} \\ \underline{\hspace{2cm}} + \\ \underline{\hspace{2cm}} + \end{array} \begin{array}{r} + \\ \\ + \end{array} \begin{array}{r} \underline{\hspace{2cm}} \\ \underline{\hspace{2cm}} \\ \underline{\hspace{2cm}} \end{array} = \boxed{\text{Answer}}$$

The Reindeer Stables

- Contains the 26th letter of the alphabet. _____
- Delicious on donuts. _____
- Rhymes with the result of a question. _____
- Usually working on Valentine's Day. _____
- Not a meteor but a _____.

Answer

Note: Some clues may refer to multiple reindeer.

Combination

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NORTH POLE WORKSHOP

INDUCTION BOOKLET

Name: _____



Welcome to the Workshop

Solve the puzzle in each location to reveal a number. Once you have all five numbers, add them together to reveal the combination to the toy safe!

The Wrapping Room

The first present has a ribbon the same colour as those you get if you come first in a race. It has a tag just like the third present and green coloured paper. The pattern on the paper is similar to a zebra's coat.

The ribbon on the second present is the same colour as a ripe banana and its tag is square. The paper colour is the same as the third present. Its pattern is the same as the first.

The third present's paper is coloured the same as Santa's suit. Its pattern is different to the other presents. Its tag is circular and has a ribbon the colour of sunflower petals.

Place the numbers of each present in a box below, left to right. Then solve the number sentence.

$$\square + \square \times \square = \text{Answer}$$

The Assembly Line

The amount of Wire needed to make one Drone multiplied by the amount of Wool it takes to make a Talking Doll.

$$\square \times \square = \text{Answer}$$

The Mail Room



$$\text{Answer}$$

The Wrapping Room

There seems to be a lot of different types of wrapping paper combinations at the workshop.

Take a look in your induction booklets to see if there are any special combinations that could be used to find a number.



1



2



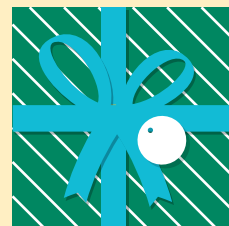
3



4



5



6



7



8



9



10



11



12



13



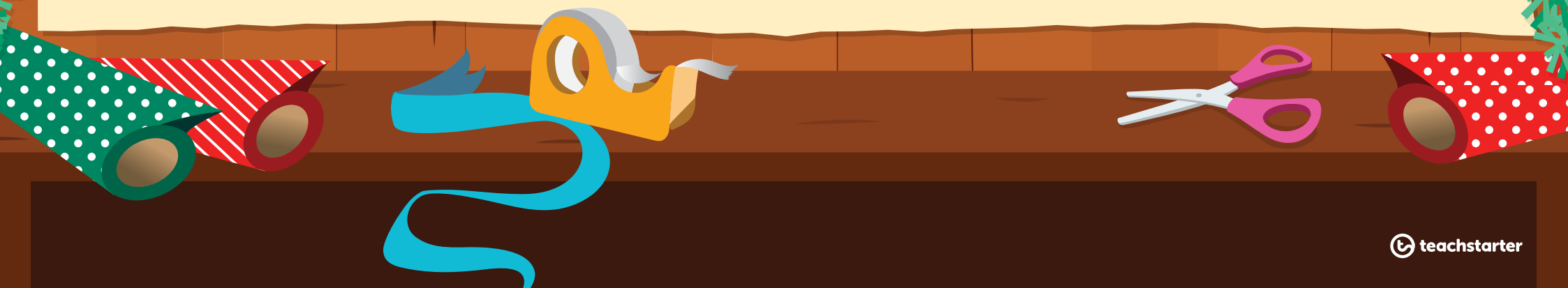
14



15



16



The Candy Cane Chutes

Santa must have hidden a clue in this elaborate candy cane sorting system. The symbols on the rotating sections look like those in your induction booklet. Make sure they are set properly before determining the value of each letter.

A

B

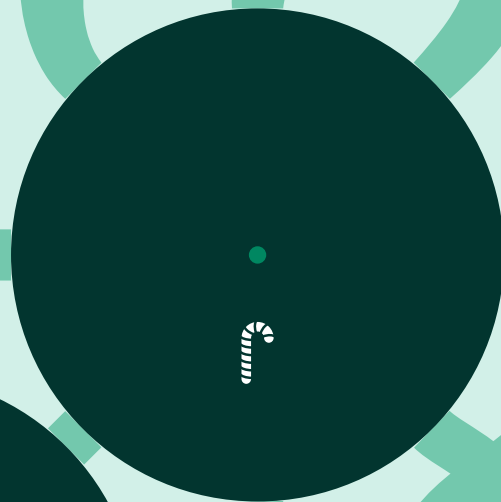
C

D

E

F

G



1

2

3

5

10

20

100

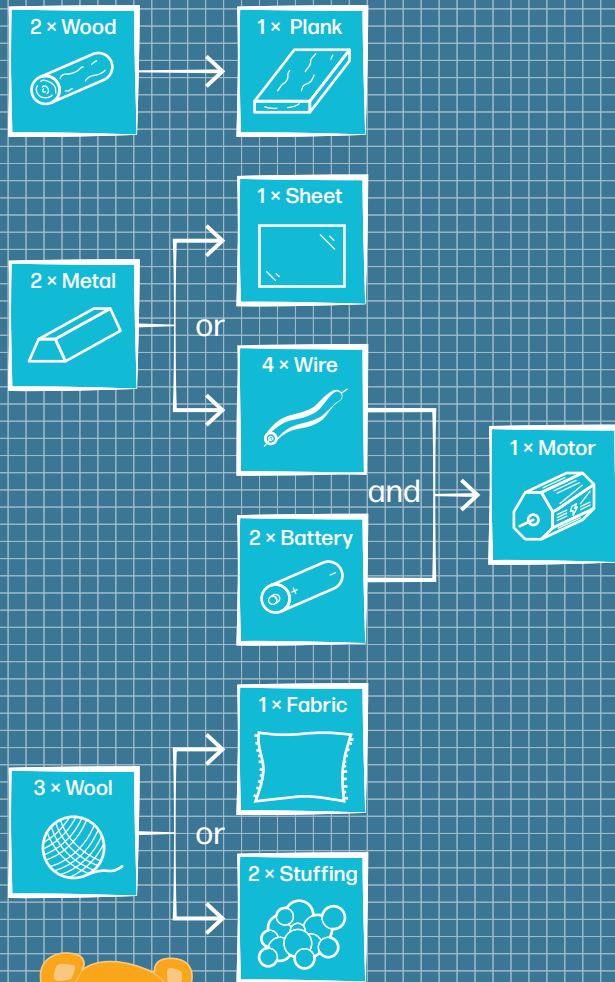
50

5

1

3

Flow Chart



The Assembly Line

This is where the toys are made! There seems to be a flow chart to help the elves remember how to convert some items into others.

Check your induction booklet to see if you can use this information to solve the clue.

Popular Toys

1. Wooden Car: 2 Planks + 2 Wood
2. Teddy Bear: 1 Fabric + 4 Stuffing
3. Robot: 1 Sheet + 4 Wire + 1 Battery
4. Drone: 4 Motor + 4 Wire + 2 Battery + 1 Sheet
5. Talking Doll: 1 Fabric + 2 Stuffing + 2 Battery



The Reindeer Stables

The layout of the reindeer stables is quite unique. Such a shame the numbers are all over the place!

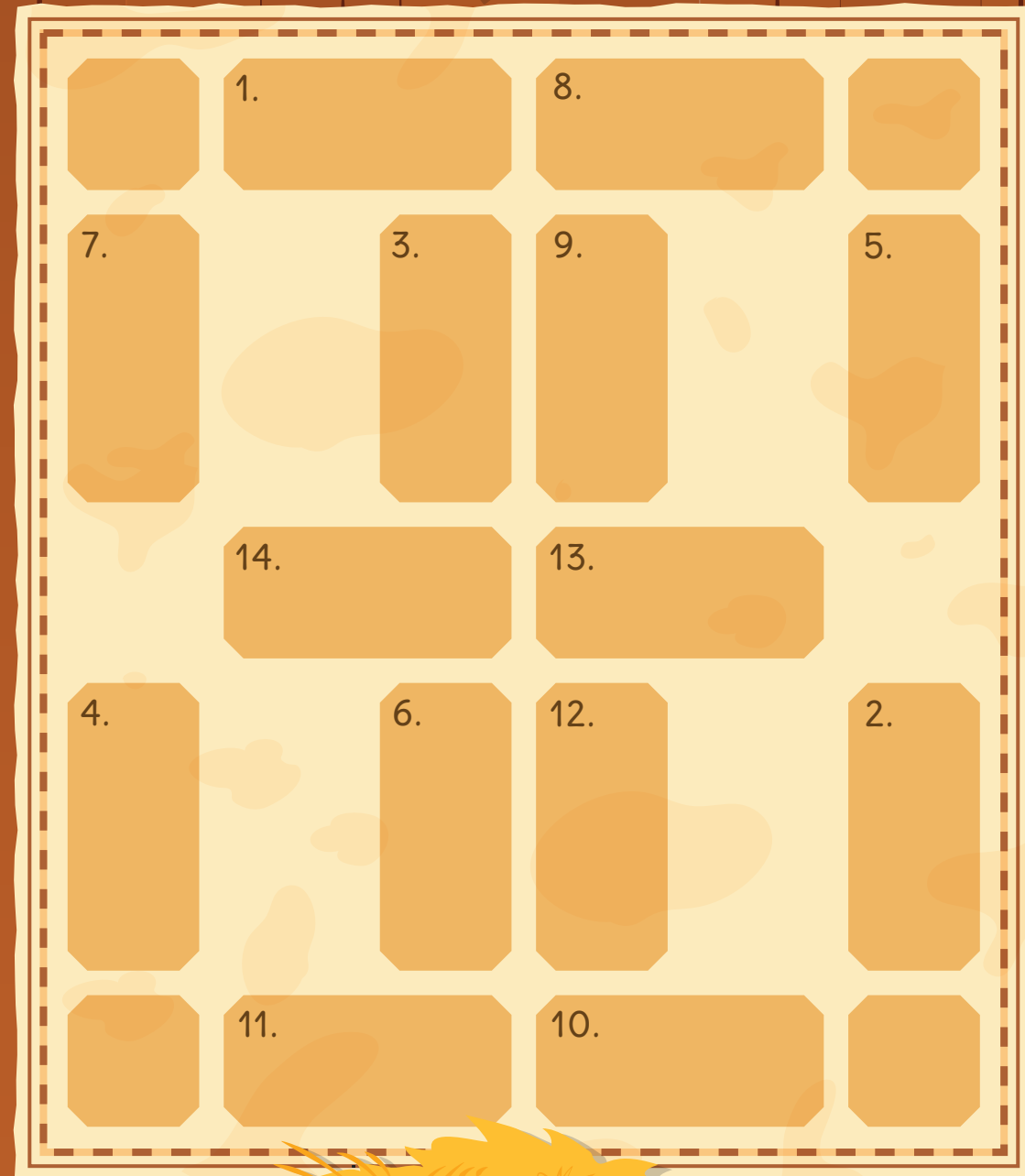
There must be a reason why they are situated in such a strange formation.

Check out the induction booklet for some clues. Some stables might be more important than others.

Cover the important stables with a token to see if anything is revealed.

Stable Allocation

- | | | |
|------------|---------------|--------------|
| 1. Dasher | 6. Cupid | 11. Tinsel |
| 2. Dancer | 7. Donner | 12. Fluffy |
| 3. Prancer | 8. Blitzen | 13. Cinnamon |
| 4. Vixen | 9. Rudolph | 14. Chestnut |
| 5. Comet | 10. Sprinkles | |

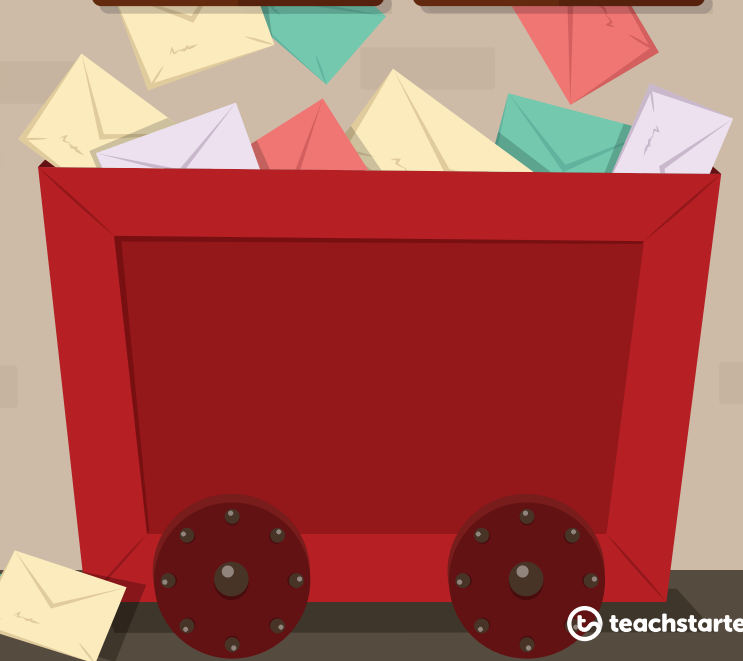


The Mail Room

Santa gets letters in many languages from all around the world. It looks like there is a special code used to convert messages.

The symbols look like those in your induction booklet. See if you can decode what the message is trying to say.

A	B	C	D	E	F	G	H	I	J	K	L	M
												
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
												



Answer Explanation

The Assembly Line

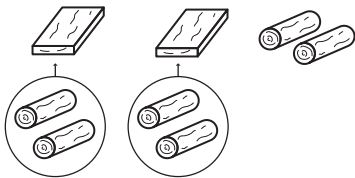
This puzzle uses a mechanic that is similar to the way items are 'crafted' in popular video games. The direction of the arrows indicate what goes into making an item.

The base materials are Wood, Metal, Wool and Batteries. These do not need to be created using other materials.

The following is a breakdown of the materials needed for each Popular Toy.

Wooden Car

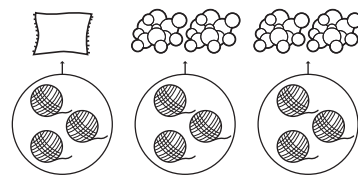
2 Planks + 2 Wood



Six Wood for one Wooden Car

Teddy Bear

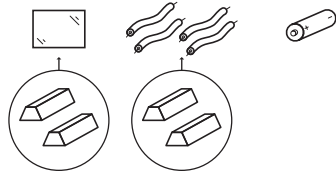
1 Fabric + 4 Stuffing



Nine Wool in one Teddy Bear

Robot

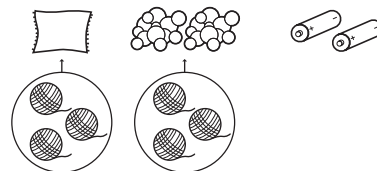
1 Sheet + 4 Wire + 1 Battery



Four Metal in one Robot

Talking Doll

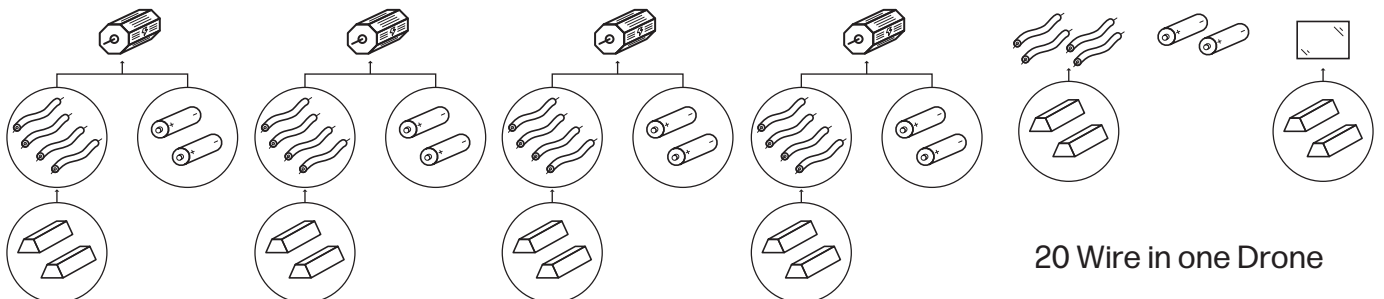
1 Fabric + 2 Stuffing + 2 Battery



Six Wool in one Talking Doll

Drone

4 Motor + 4 Wire + 2 Battery + 1 Sheet



20 Wire in one Drone

The Candy Cane Chutes



$$\begin{array}{r} B+C+D+F+G \\ 2+3+5+1+10 \end{array}$$



$$\begin{array}{r} B+C+D+E+F \\ 10+5+5+1+20 \end{array}$$

$$\underline{21} + \underline{41} =$$

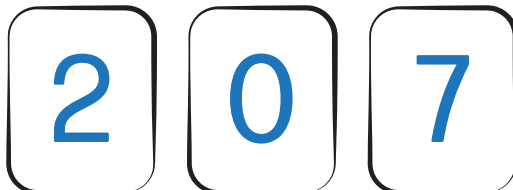
Answer
62

The Reindeer Stables

- The sound someone makes when they are telling you to be quiet is in this name. Dasher
- It's so Fluffy !
- Starts with the third letter of the alphabet and has two of the twentieth. Chestnut
- Guides the sleigh at night. Rudolph
- Wrap this around the tree. Tinsel

Answer
3

Combination



NORTH POLE WORKSHOP

INDUCTION BOOKLET

Answers

Welcome to the Workshop

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The second present has red stripy paper. It has the same colour ribbon and same tag as the first present.

Multiply the two numbers together to find the answer.

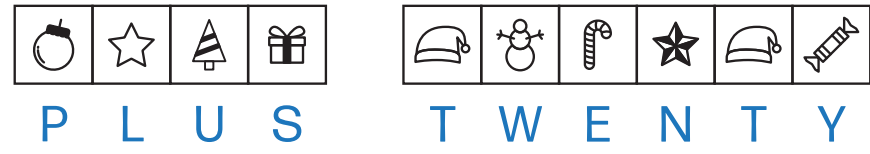
$$\boxed{9} \times \boxed{5} = \text{Answer } \boxed{45}$$

The Assembly Line

The amount of Wood it takes to make two Wooden Cars plus the amount of Wool it takes to make one Teddy Bear.

$$\boxed{12} + \boxed{9} = \text{Answer } \boxed{21}$$

The Mail Room



$$\text{Answer } \boxed{76}$$

The Candy Cane Chutes



A+B+C+F+G

3+10+3+2+50



B+C+D+E+G

10+100+5+5+2

+

68

+

122

=

Answer

190

The Reindeer Stables

- Starts with the 22nd letter of the alphabet. Vixen
- This name contains something that is left over after a fire. Dasher
- Sparkly string you use to decorate. Tinsel
- This name contains something that holds treasure. Chestnut
- An adjective. Fluffy
- Has a similar letter combination in their name to the reindeer in stable 13. Donner

Answer

6

Combination

3

8

8

NORTH POLE WORKSHOP

INDUCTION BOOKLET

Answers

 teachstarter



Welcome to the Workshop

Solve the puzzle in each location to reveal a number. Once you have all five numbers, add them together to reveal the combination to the toy safe!

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The third present has a yellow ribbon and a tag that has corners. The pattern on the paper is different to the other presents and is the colour you get when you mix yellow and blue.

Add all the numbers together to find the answer.

$$\boxed{10} + \boxed{15} + \boxed{12} = \boxed{\text{Answer } 37}$$

The Assembly Line

The amount of Metal it takes to make four Robots plus the amount of Wood needed to make three Wooden Cars.

$$\boxed{16} + \boxed{18} = \boxed{\text{Answer } 34}$$

The Mail Room



$$\boxed{\text{Answer } 121}$$

The Candy Cane Chutes



$$(A + F) \times (C + E)$$

$$(5 + 10) \times (3 + 1)$$

$$\begin{array}{r} 15 \times 4 \\ \hline 60 \end{array} \quad + \quad \begin{array}{r} 100 \times 59 \\ \hline 5900 \end{array}$$



$$A \times (G + B \times C)$$

$$100 \times (50 + 3 \times 3)$$

$$\begin{array}{r} \text{Answer} \\ \hline 5960 \end{array}$$

The Reindeer Stables

- Contains the 26th letter of the alphabet. Blitzen
- Delicious on donuts. Cinnamon and Sprinkles
- Rhymes with the result of a question. Prancer and Dancer
- Usually working on Valentine's Day. Cupid
- Not a meteor but a Comet.

Note: Some clues may refer to multiple reindeer.

Answer

8

Combination



NORTH POLE WORKSHOP

INDUCTION BOOKLET

Answers

 teachstarter



Welcome to the Workshop

Solve the puzzle in each location to reveal a number. Once you have all five numbers, add them together to reveal the combination to the toy safe!

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Place the numbers of each present in a box below, left to right. Then solve the number sentence.

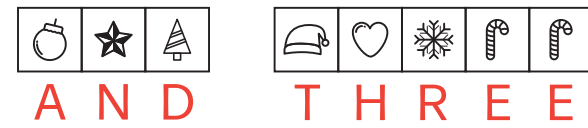
$$\boxed{6} + \boxed{8} \times \boxed{11} = \text{Answer } \boxed{94}$$

The Assembly Line

The amount of Wire needed to make one Drone multiplied by the amount of Wool it takes to make a Talking Doll.

$$\boxed{20} \times \boxed{6} = \text{Answer } \boxed{120}$$

The Mail Room



Answer

$$\boxed{51}$$