Measurement: Cooking Times

Aim:	**Success Criteria:**	**Resources:**
Solve problems involving converting between units of time. I can solve problems involving converting between times written as hours and minutes and times written in minutes.	I can convert times given in minutes into hours and minutes. I can convert times given in hours and minutes into minutes. I can solve a problem involving timed events, converting from one unit to another.	**Lesson Pack** Individual whiteboards and pens – class set
	Key/New Words: Time, convert, hours, minutes.	**Preparation:** Differentiated **Cooking Times Activity Sheet** – one per child

Prior Learning: It will be helpful if children can add and subtract time amounts to times written in digital 12-hour time.

Learning Sequence

	How many eggs? Use the **Lesson Presentation** to recap the 6× table. Children calculate how many eggs are in multiple egg boxes.	
	Converting Hours to Minutes: Children convert the times written on the **Lesson Presentation** from hours to minutes. The times start off in whole hours, then move onto fractional quantities (for example, $3\frac{1}{2}$ hours).	
	Cooking Start and Finish Times: The **Lesson Presentation** shows a variety of slow cooker meals, giving the start and end times for cooking. Children calculate the time it takes to cook the meals and write the answers in minutes. They then convert the cooking times from minutes to hours and minutes.	
	Cooking Turkeys: Information is given for the length of time required to cook a turkey linked to its weight. Children calculate the cooking time for a variety of turkeys, both whole and fractional measurements.	
	Cooking Times: Children complete the **Cooking Times Activity Sheet**, solving problems involving converting between hours and minutes and minutes. ★ Children convert from hours to minutes and minutes to whole hours. They calculate cooking times for recipes (times given in 15-minute intervals). They calculate the end times for recipes, given the start time and the cooking time. They calculate how long a turkey needs to be cooked, based on its weight. The weights are all whole kilogram weights. ★★ Children convert from hours to minutes and minutes to whole and fractional hours. They calculate cooking times for recipes (times given in five minute intervals). They calculate the end times for recipes, given the start time and the cooking time. They calculate how long a turkey needs to be cooked, based on its weight. The weights are whole kilogram and fractional kilogram weights. Children solve a problem, calculating when a turkey will be cooked, given the mass and start time. ★★★ Children convert from hours to minutes and minutes to whole and fractional hours. They calculate cooking times for recipes (times given in five minute intervals). They calculate the start times for recipes, given the end time and the cooking time. They calculate how long a turkey needs to be cooked, based on its weight. The weights are whole kilogram and fractional kilogram weights. Children solve a problem, comparing the cooking times of two turkeys.	
	Turkey Problem: Children solve a word problem involving cooking times for turkeys.	

Exploreit

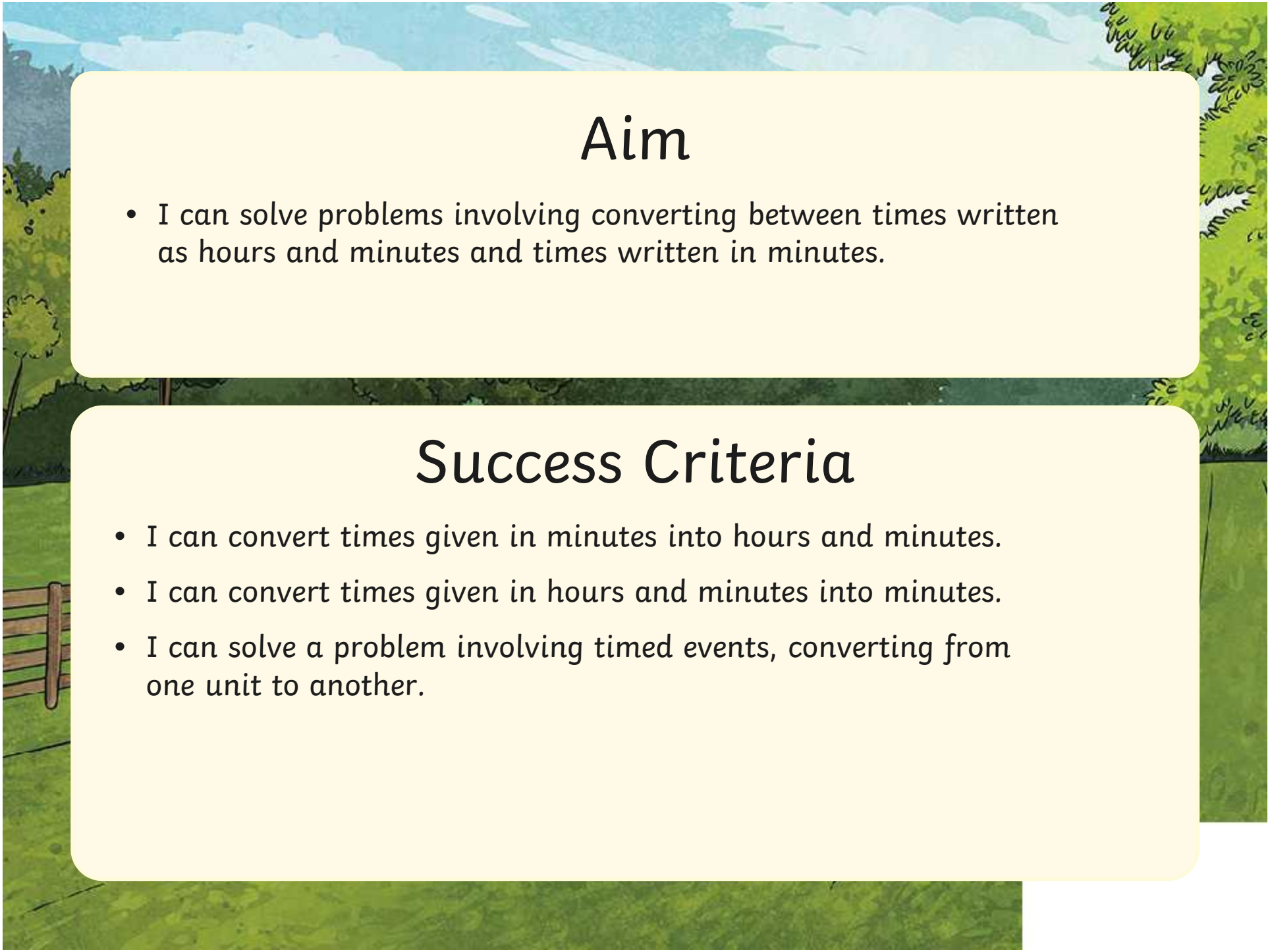
Playit: Children use the internet to investigate cooking times for recipes. They create a table for further recipes, giving cooking times in both hours and minutes and minutes.

Actit: In pairs, children use the to practise the skills of conversion used in the lesson.

Maths

Measurement

Cooking Times



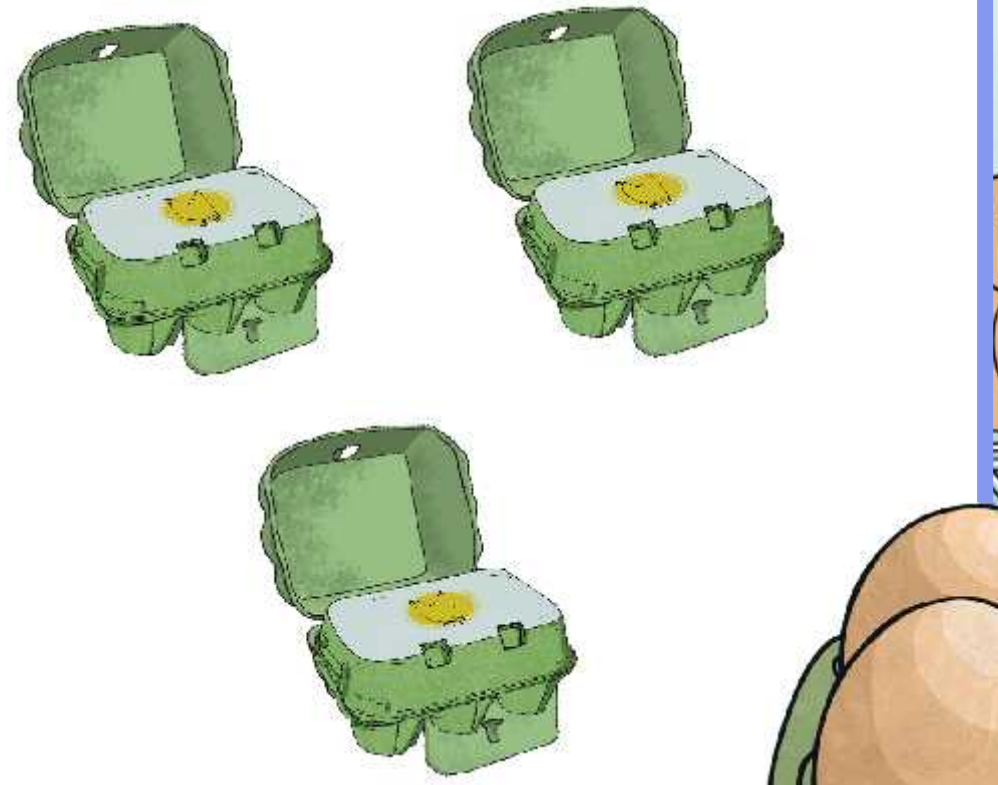
Aim

- I can solve problems involving converting between times written as hours and minutes and times written in minutes.

Success Criteria

- I can convert times given in minutes into hours and minutes.
- I can convert times given in hours and minutes into minutes.
- I can solve a problem involving timed events, converting from one unit to another.

How Many Eggs?

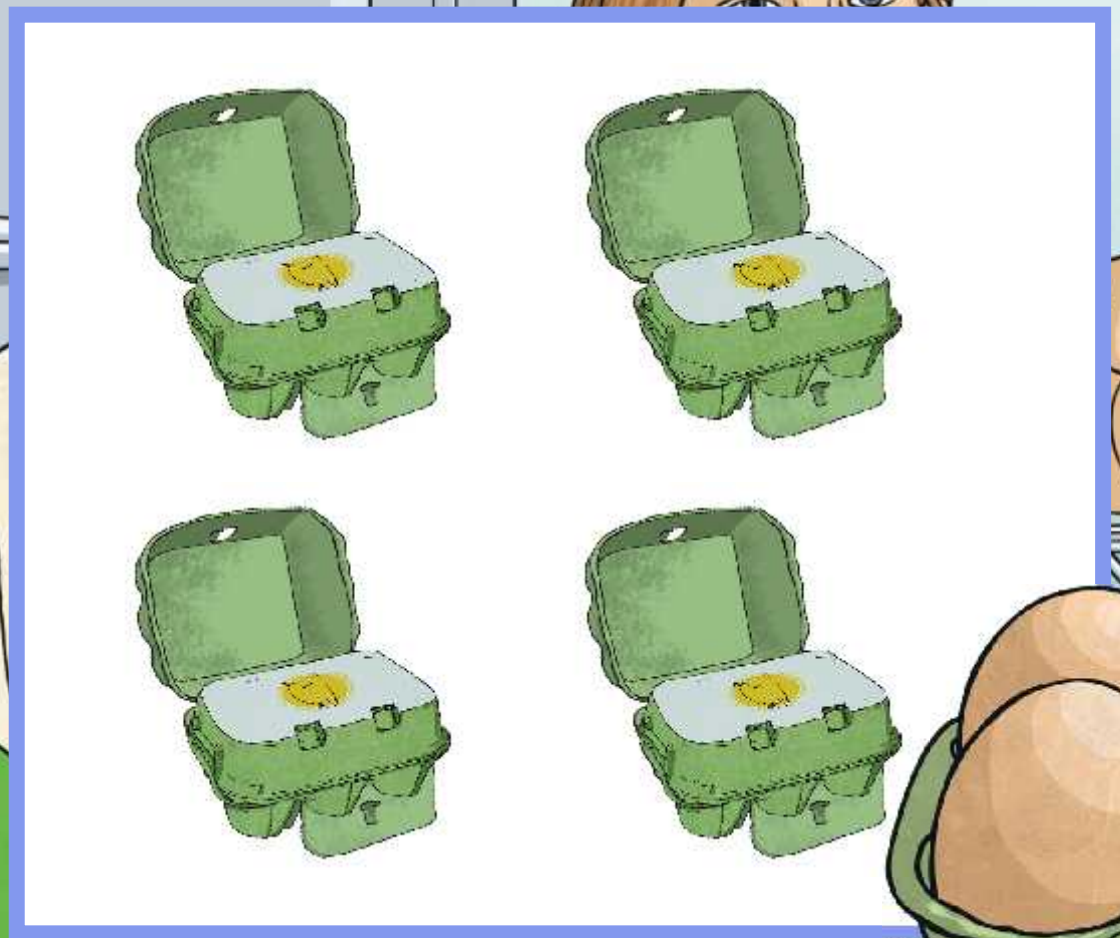


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

3 × 6 = 18

How Many Eggs?

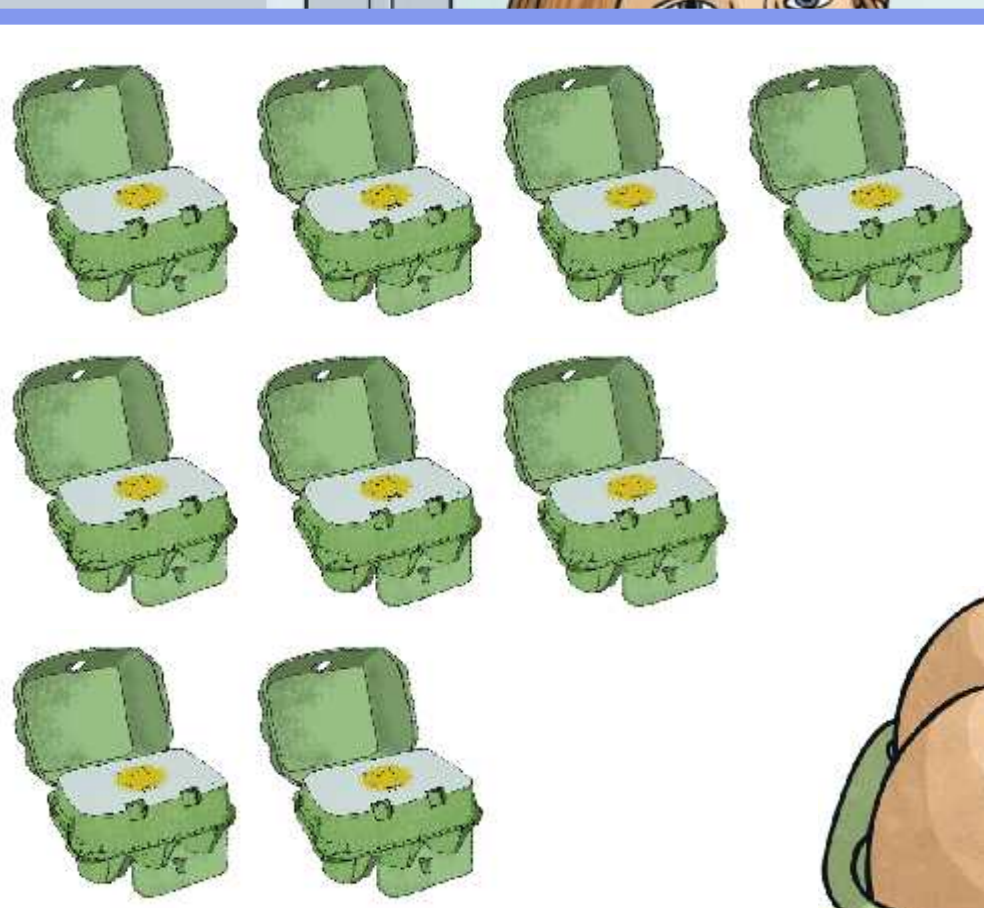


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

4 × 6 = 24

How Many Eggs?

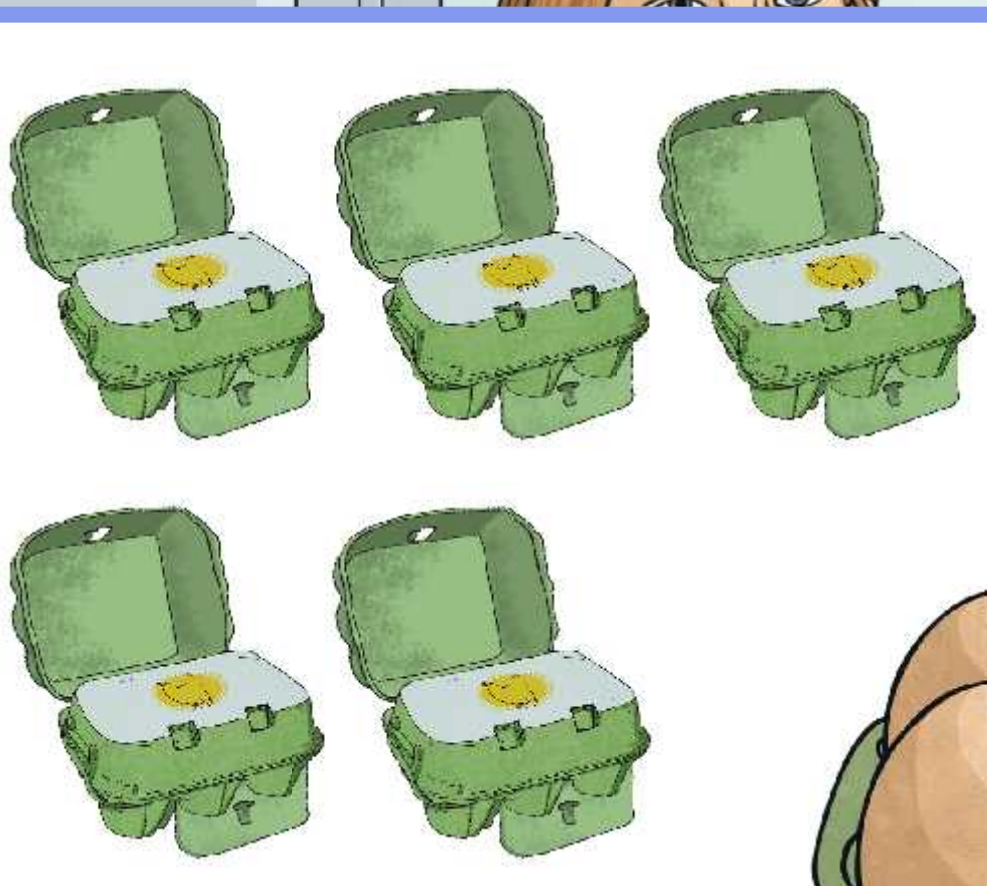


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

9 × 6 = 54

How Many Eggs?

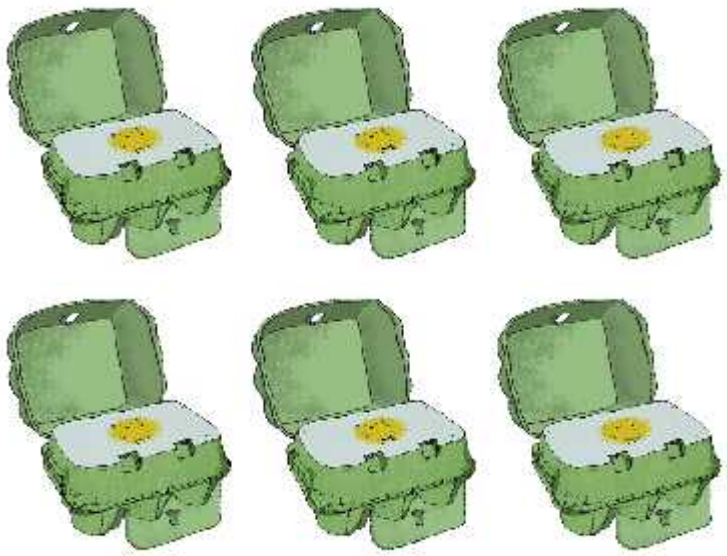


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

5 × 6 = 30

How Many Eggs?

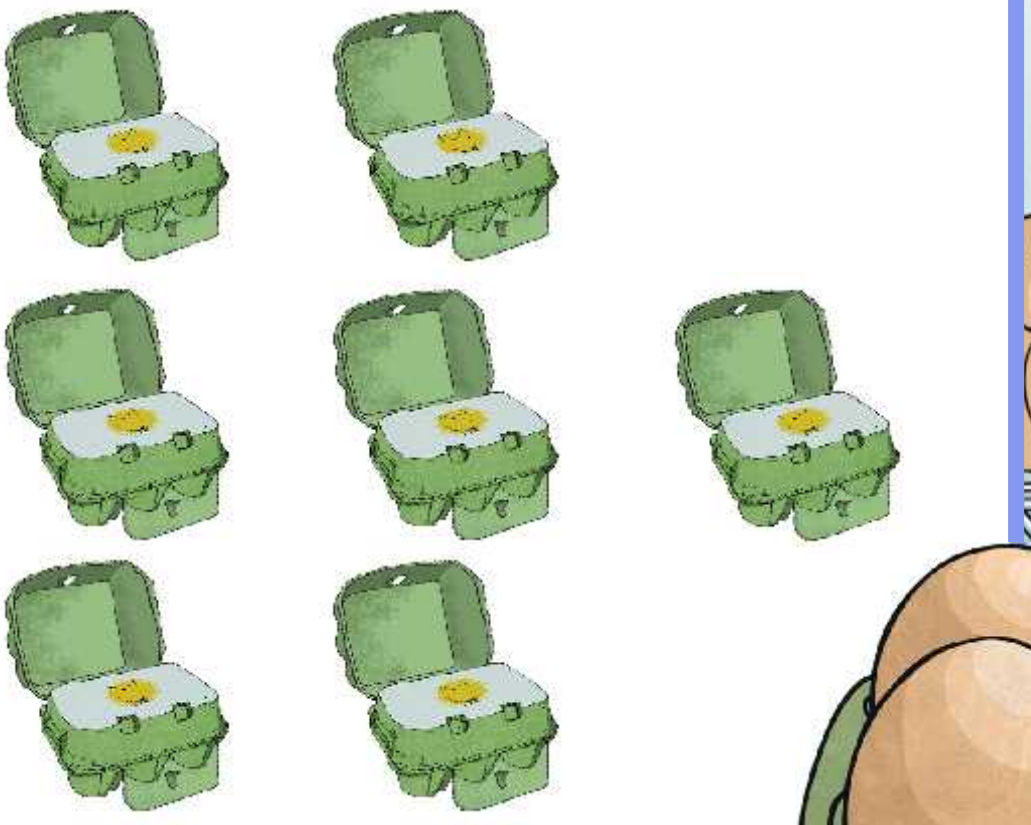


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

6 × 6 = 36

How Many Eggs?

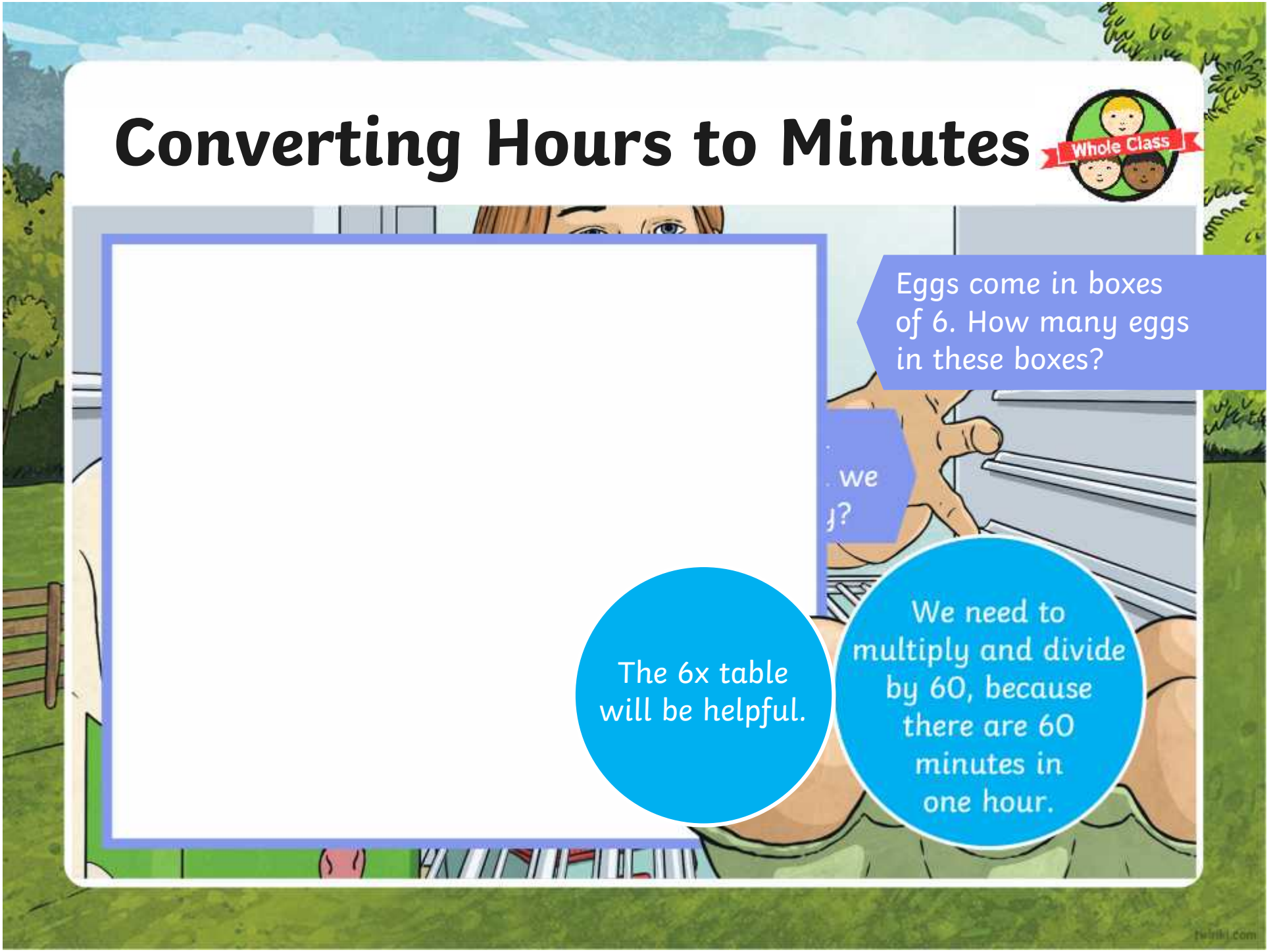


Eggs come in boxes of 6. How many eggs in these boxes?

Answer:

7 × 6 = 42

Converting Hours to Minutes



Converting Hours to Minutes

Whole Class

Can you use your 6× table to complete the list of multiples of 60?

There are 60 minutes in 1 hour. Convert these times into minutes.

	3 × 60	180
	4 × 60	240
2 hours	=	120 minutes
	5 × 60	300
	6 × 60	360
5 hours	=	300 minutes
	7 × 60	420
	8 × 60	480
8 hours	=	480 minutes
	9 × 60	540
	10 × 60	600

Converting Hours to Minutes

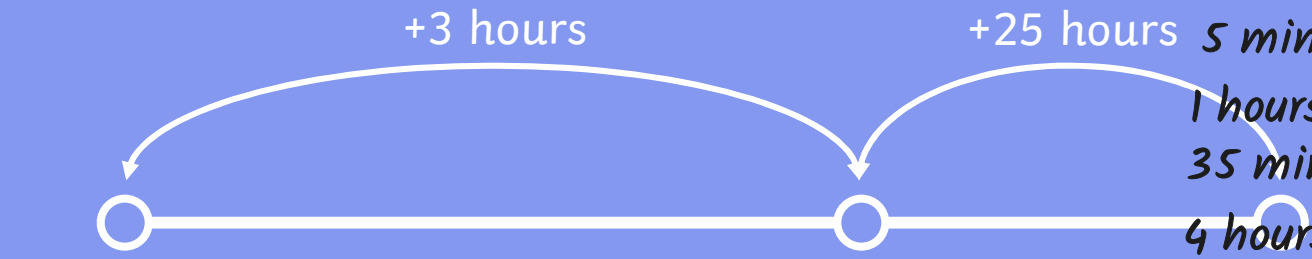
Cooking Start and Finish Times

Here are some popul
times are given. Ca
your answer in hour

Now calculate how long the other recipes take to cook, write your answers in hours and minutes.

Recipe	Start Time	End Time	Time Taken (Hours and Minutes)
Spinach and chicken curry	10:00 a.m.	1:25 p.m.	3 hours and 25 minutes

Let's calculate the time taken for the first recipe. We can use a timeline:



4 hours and 10 minutes

6 hours and 5 minutes

1 hours and 35 minutes

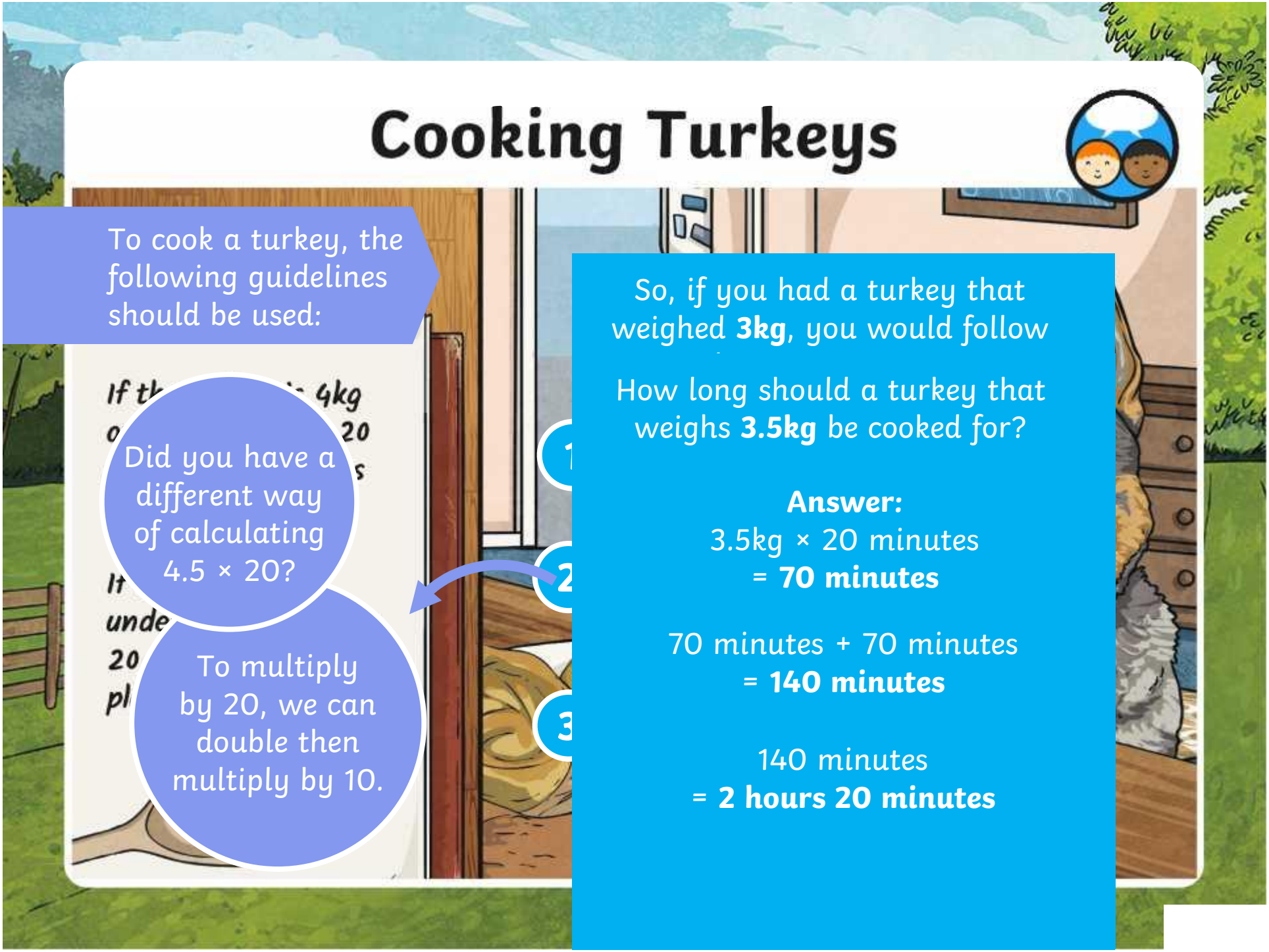
4 hours and 25 minutes

Cooking Start and Finish Times

Convert the cooking times from hours and minutes to just the total number of minutes. The first one has been done:

Recipe	**Time Taken** (Hours and Minutes)	**Time Taken** (Minutes)
Spinach and chicken curry	3 hours 25 minutes	205 minutes
Chicken casserole	4 hours 10 minutes	*250 minutes*
Meat stroganoff	6 hours 5 minutes	*365 minutes*
Mushroom risotto	1 hour 35 minutes	*95 minutes*
Rice pudding	4 hours 25 minutes	*265 minutes*

Cooking Turkeys



To cook a turkey, the following guidelines should be used:

Did you have a different way of calculating 4.5 × 20?

To multiply by 20, we can double then multiply by 10.

So, if you had a turkey that weighed **3kg**, you would follow

How long should a turkey that weighs **3.5kg** be cooked for?

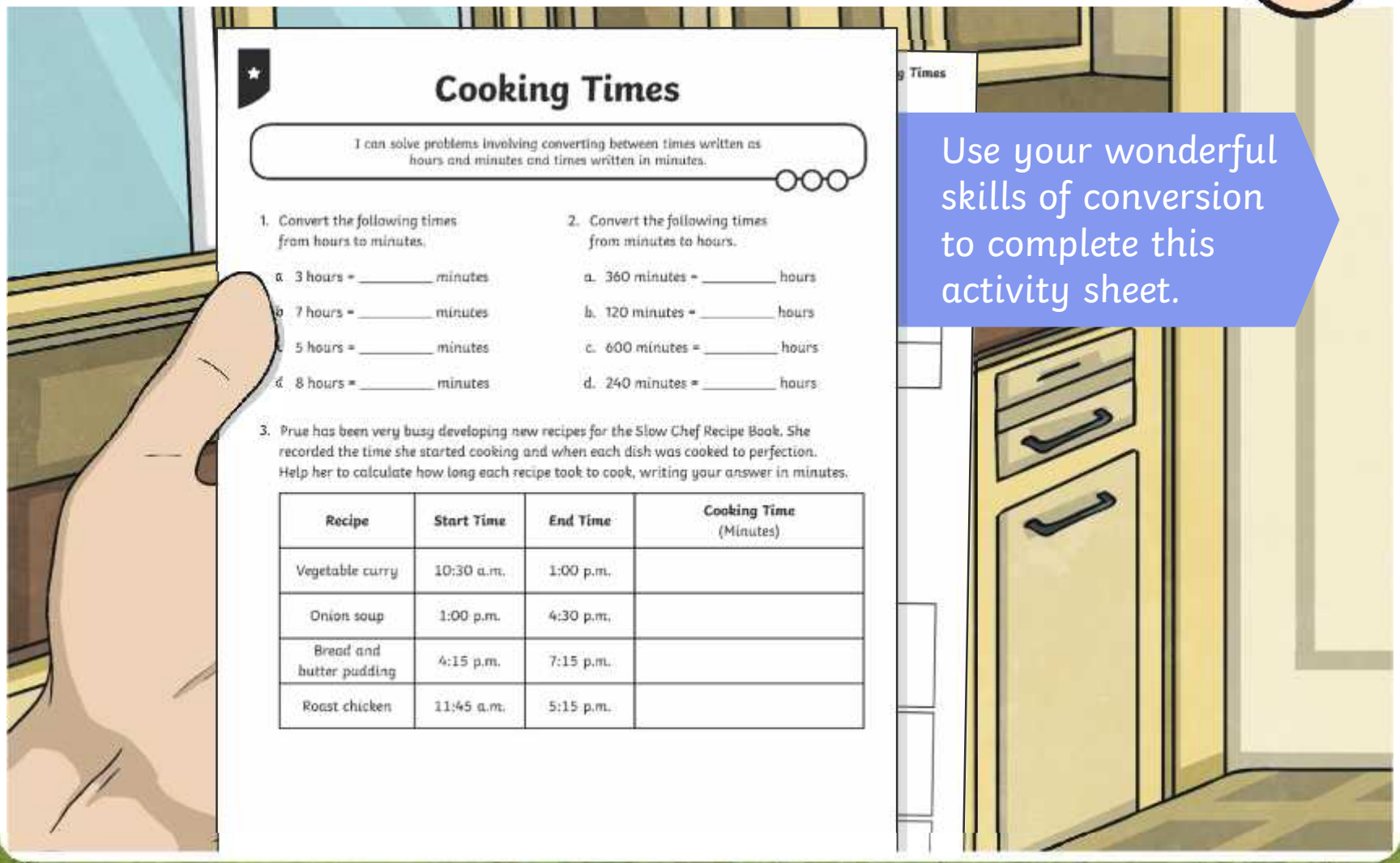
Answer:

3.5kg × 20 minutes
= **70 minutes**

70 minutes + 70 minutes
= **140 minutes**

140 minutes
= **2 hours 20 minutes**

Cooking Times



Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.

1. Convert the following times from hours to minutes.

a. 3 hours = _____ minutes

b. 7 hours = _____ minutes

c. 5 hours = _____ minutes

d. 8 hours = _____ minutes

2. Convert the following times from minutes to hours.

a. 360 minutes = _____ hours

b. 120 minutes = _____ hours

c. 600 minutes = _____ hours

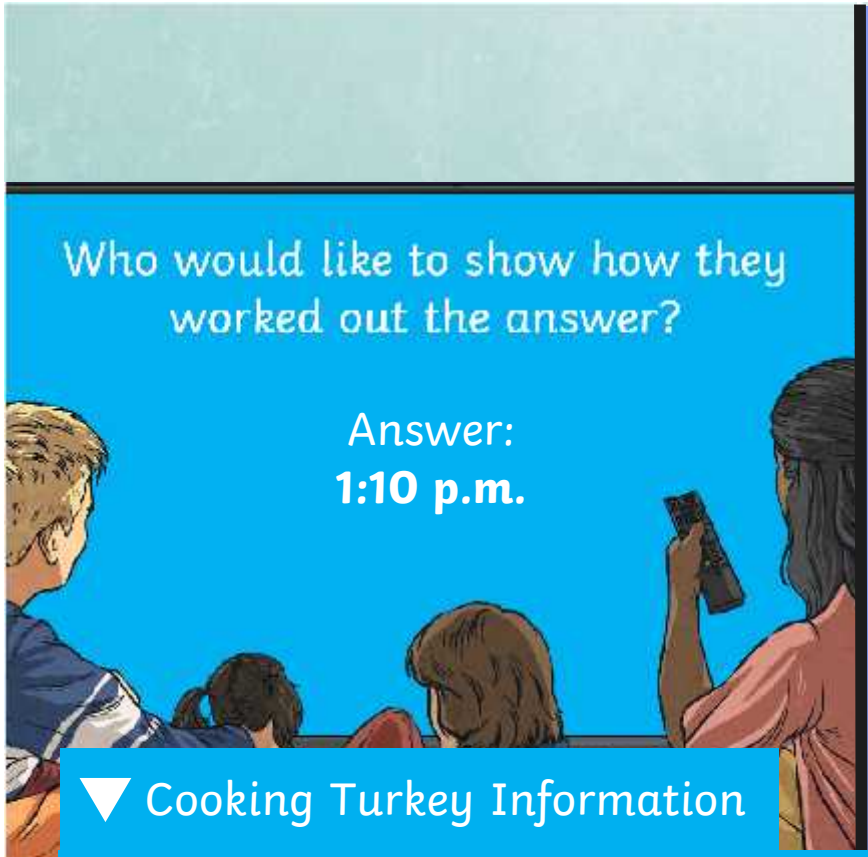
d. 240 minutes = _____ hours

3. Prue has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	Start Time	End Time	Cooking Time (Minutes)
Vegetable curry	10:30 a.m.	1:00 p.m.	
Onion soup	1:00 p.m.	4:30 p.m.	
Bread and butter pudding	4:15 p.m.	7:15 p.m.	
Roast chicken	11:45 a.m.	5:15 p.m.	

Use your wonderful skills of conversion to complete this activity sheet.

Turkey Problem



The Burns family are having turkey for their family celebration meal. Dad wants to have the turkey cooked 45 minutes before they sit down to eat. The family plan to eat their meal at 6:15 p.m. The turkey weighs 8.5kg. What time does he need to put the turkey into the oven?

▼ Cooking Turkey Information

If the turkey is 4kg or over, calculate 20 minutes per kg plus 90 minutes.
If the turkey is under 4kg, calculate 20 minutes per kg plus 70 minutes.

Aim

- I can solve problems involving converting between times written as hours and minutes and times written in minutes.

Success Criteria

- I can convert times given in minutes into hours and minutes.
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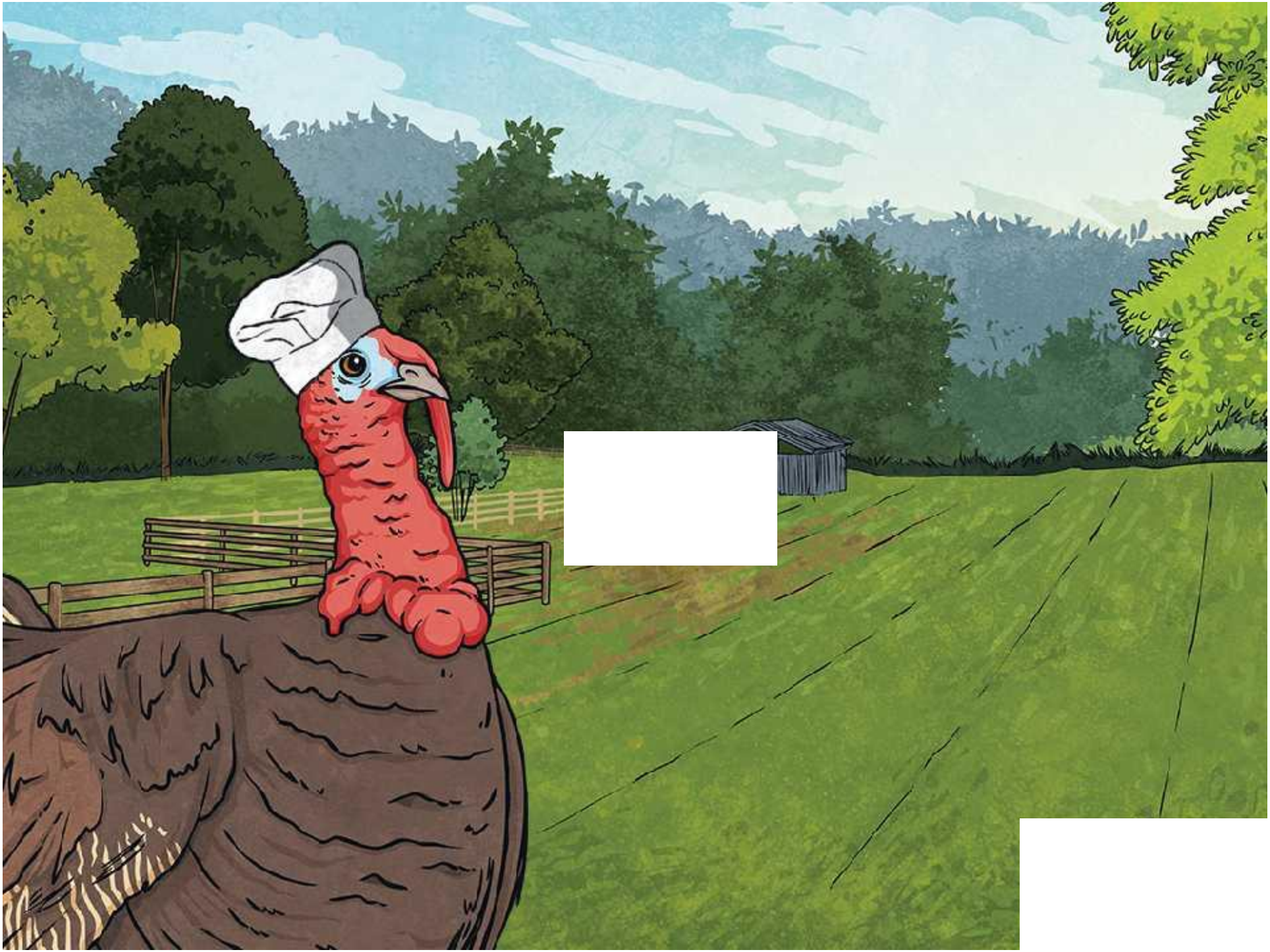

Aim: I can solve problems involving converting between times written as hours and minutes and times written in minutes.				**Date:**					
				Delivered By:			**Support:**		
Success Criteria	**Me**	**Friend**	**Teacher**	**T**	**PPA**	**S**	**I**	**AL**	**GP**
I can convert times given in minutes into hours and minutes.				**Notes/Evidence**					
I can convert times given in hours and minutes into minutes.									
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Next Steps

- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

Aim: I can solve problems involving converting between times written as hours and minutes and times written in minutes.				**Date:**					
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Next Steps

- _____
- _____

T	Teacher	**I**	Independent
PPA	Planning, Preparation and Assessment	**AL**	Adult Led
S	Supply	**GP**	Guided Practice

Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.

1. Convert the following times from hours to minutes.

   a. 3 hours = _____ minutes

   b. 7 hours = _____ minutes

   c. 5 hours = _____ minutes

   d. 8 hours = _____ minutes

2. Convert the following times from minutes to hours.

   a. 360 minutes = _____ hours

   b. 120 minutes = _____ hours

   c. 600 minutes = _____ hours

   d. 240 minutes = _____ hours

3. Prue has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Vegetable curry	10:30 a.m.	1:00 p.m.	
Onion soup	1:00 p.m.	4:30 p.m.	
Bread and butter pudding	4:15 p.m.	7:15 p.m.	
Roast chicken	11:45 a.m.	5:15 p.m.	

4. Paul wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	Start Time	End Time	Cooking Time
Vegetable casserole		3:30 p.m.	300 minutes
Chilli con carne		6:00 p.m.	240 minutes
Cheese cake		5:45 p.m.	120 minutes
Macaroni cheese		12:45 p.m.	90 minutes

5. To cook a turkey, the following guidelines should be used:

If the turkey is 4kg and over	calculate 20 minutes per kg plus 90 minutes.
If the turkey is under 4kg	calculate 20 minutes per kg plus 70 minutes.

Calculate how long you should cook the following sized turkeys. Write your answer in hours and minutes. Show how you worked out the answer.

a) a turkey weighing 6kg

b) a turkey weighing 2kg

c) a turkey weighing 7kg

Cooking Times **Answers**

1. Convert the following times from hours to minutes.

   a. 3 hours = **180** minutes
   b. 7 hours = **420** minutes
   c. 5 hours = **300** minutes
   d. 8 hours = **480** minutes

2. Convert the following times from minutes to hours.

   a. 360 minutes = **6** hours
   b. 120 minutes = **2** hours
   c. 600 minutes = **10** hours
   d. 240 minutes = **4** hours

3. Prue has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Vegetable curry	10:30 a.m.	1:00 p.m.	**150 minutes**
Onion soup	1:00 p.m.	4:30 p.m.	**210 minutes**
Bread and butter pudding	4:15 p.m.	7:15 p.m.	**180 minutes**
Roast chicken	11:45 a.m.	5:15 p.m.	**330 minutes**

4. Paul wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	**Start Time**	**End Time**	**Cooking Time**
Vegetable casserole	**10:30 a.m.**	3:30 p.m.	300 minutes
Chilli con carne	**2:00 p.m.**	6:00 p.m.	240 minutes
Cheese cake	**3:45 p.m.**	5:45 p.m.	120 minutes
Macaroni cheese	**11:15 a.m.**	12:45 p.m.	90 minutes

5. Calculate how long you should cook the following sized turkeys.
   Write your answer in hours and minutes. Show how you worked out the answer.

   a. a turkey weighing 6kg
      3 hours 30 minutes

   b. a turkey weighing 2kg
      1 hour 50 minutes

   c. a turkey weighing 7kg
      3 hours 50 minutes

Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.

1. Convert the following times from hours to minutes.

   a. 6 hours = _____ minutes

   b. $2\frac{1}{2}$ hours = _____ minutes

   c. $3\frac{1}{4}$ hours = _____ minutes

   d. $5\frac{3}{4}$ hours = _____ minutes

2. Convert the following times from minutes to hours. Use a fraction to record additional minutes (e.g. $2\frac{1}{2}$ hours).

   a. 240 minutes = _____ hours

   b. 315 minutes = _____ hours

   c. 375 minutes = _____ hours

   d. 510 minutes = _____ hours

3. Nigella has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Potato curry	9:35 a.m.	2:10 p.m.	
Tomato soup	3:10 p.m.	5:55 p.m.	
Sponge pudding	2:20 p.m.	7:45 p.m.	
Chicken hotpot	10:55 a.m.	6:05 p.m.	

4. Gordon wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	Start Time	End Time	Cooking Time
Bean casserole		7:40 p.m.	600 minutes
Veggie mash		4:30 p.m.	200 minutes
Sponge cake		6:45 p.m.	260 minutes

5. To cook a turkey, the following guidelines should be used:

If the turkey is 4kg and over	calculate 20 minutes per kg plus 90 minutes.
If the turkey is under 4kg	calculate 20 minutes per kg plus 70 minutes.

Calculate how long you should cook the following sized turkeys.
Write your answer in hours and minutes. Show how you worked out the answer.

a) a turkey weighing 7kg

b) a turkey weighing 3.5kg

c) a turkey weighing 8.5kg

6. A 5kg turkey is put in the oven at 2:15 p.m. When will it be cooked?

_____

Cooking Times **Answers**

1. Convert the following times from hours to minutes.

   a. 6 hours = **360** minutes

   b. $2\frac{1}{2}$ hours = **150** minutes

   c. $3\frac{1}{4}$ hours = **195** minutes

   d. $5\frac{3}{4}$ hours = **345** minutes

2. Convert the following times from minutes to hours. Use a fraction to record additional minutes (e.g. $2\frac{1}{2}$ hours).

   a. 240 minutes = **4** hours

   b. 315 minutes = **$5\frac{1}{4}$** hours

   c. 375 minutes = **$6\frac{1}{4}$** hours

   d. 510 minutes = **$8\frac{1}{2}$** hours

3. Nigella has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Potato curry	9:35 a.m.	2:10 p.m.	**275 minutes**
Tomato soup	3:10 p.m.	5:55 p.m.	**165 minutes**
Sponge pudding	2:20 p.m.	7:45 p.m.	**325 minutes**
Chicken hotpot	10:55 a.m.	6:05 p.m.	**430 minutes**

4. Gordon wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	**Start Time**	**End Time**	**Cooking Time**
Bean casserole	**9:40 a.m.**	7:40 p.m.	600 minutes
Veggie mash	**1:10 p.m.**	4:30 p.m.	200 minutes
Sponge cake	**2:25 p.m.**	6:45 p.m.	260 minutes

5. Calculate how long you should cook the following sized turkeys. Write your answer in hours and minutes. Show how you worked out the answer.

   a. a turkey weighing 7kg
      3 hours 50 minutes

   b. a turkey weighing 3.5kg
      2 hours 20 minutes

   c. a turkey weighing 8.5kg
      4 hours 20 minutes

6. A 5kg turkey is put in the oven at 2:15 p.m. When will it be cooked?
   5:25 p.m.

Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.

1. Convert the following times from hours to minutes.

   a. 5 hours = _____ minutes

   b. $3\frac{1}{2}$ hours = _____ minutes

   c. $8\frac{1}{4}$ hours = _____ minutes

   d. $7\frac{3}{4}$ hours = _____ minutes

2. Convert the following times from minutes to hours. Use a fraction to record additional minutes (e.g. $2\frac{1}{2}$ hours).

   a. 165 minutes = _____ hours

   b. 555 minutes = _____ hours

   c. 330 minutes = _____ hours

   d. 405 minutes = _____ hours

3. Nadia has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Aubergine curry	10:45 a.m.	3:30 p.m.	
Carrot soup	2:05 p.m.	6:40 p.m.	
Semolina pudding	1:25 p.m.	5:05 p.m.	
Vegetable hotpot	9:35 a.m.	5:55 p.m.	

4. Rahul wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	Start Time	End Time	Cooking Time
Vegetable casserole		3:45 p.m.	300 minutes
Goulash		5:15 p.m.	210 minutes
Drizzle cake		1:35 p.m.	190 minutes

5. To cook a turkey, the following guidelines should be used:

If the turkey is 4kg and over	calculate 20 minutes per kg plus 90 minutes.
If the turkey is under 4kg	calculate 20 minutes per kg plus 70 minutes.

Calculate how long you should cook the following sized turkeys. Write your answer in hours and minutes. Show how you worked out the answer.

a) a turkey weighing 5.3kg

b) a turkey weighing 2.8kg

c) a turkey weighing 7.5kg

6. How much longer does turkey weighing 4kg take to cook than one which weighs 3.5kg?

_____

Cooking Times **Answers**

1. Convert the following times from hours to minutes.

   a. 5 hours = **300** minutes

   b. $3\frac{1}{2}$ hours = **210** minutes

   c. $8\frac{1}{4}$ hours = **495** minutes

   d. $7\frac{3}{4}$ hours = **465** minutes

2. Convert the following times from minutes to hours. Use a fraction to record additional minutes (e.g. $2\frac{1}{2}$ hours).

   a. 165 minutes = **$2\frac{3}{4}$** hours

   b. 555 minutes = **$9\frac{1}{4}$** hours

   c. 330 minutes = **$5\frac{1}{2}$** hours

   d. 405 minutes = **$6\frac{3}{4}$** hours

3. Nigella has been very busy developing new recipes for the Slow Chef Recipe Book. She recorded the time she started cooking and when each dish was cooked to perfection. Help her to calculate how long each recipe took to cook, writing your answer in minutes.

Recipe	**Start Time**	**End Time**	**Cooking Time** (Minutes)
Aubergine curry	10:45 a.m.	3:30 p.m.	**285 minutes**
Carrot soup	2:05 p.m.	6:40 p.m.	**275 minutes**
Semolina pudding	1:25 p.m.	5:05 p.m.	**220 minutes**
Vegetable hotpot	9:35 a.m.	5:55 p.m.	**500 minutes**

4. Rahul wants his dinner to be ready at these end times. The Slow Chef Recipe Book tells him how long each dish takes to cook. Help him to calculate what time to start cooking.

Recipe	**Start Time**	**End Time**	**Cooking Time**
Vegetable casserole	**10:45 a.m.**	3:45 p.m.	300 minutes
Goulash	**1:45 p.m.**	5:15 p.m.	210 minutes
Drizzle cake	**10:25 a.m.**	1:35 p.m.	190 minutes

5. Calculate how long you should cook the following sized turkeys. Write your answer in hours and minutes. Show how you worked out the answer.

   a. a turkey weighing 5.3kg
      3 hours 16 minutes

   b. a turkey weighing 2.8kg
      2 hours 6 minutes

   c. a turkey weighing 7.5kg
      4 hours

6. How much longer does turkey weighing 4kg take to cook than one which weighs 3.5kg?
   30 minutes

Measurement | Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.		
I can convert times given in minutes into hours and minutes.		
I can convert times given in hours and minutes into minutes.		
I can solve a problem involving timed events, converting from one unit to another.		

Measurement | Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.		
I can convert times given in minutes into hours and minutes.		
I can convert times given in hours and minutes into minutes.		
I can solve a problem involving timed events, converting from one unit to another.		

Measurement | Cooking Times

I can solve problems involving converting between times written as hours and minutes and times written in minutes.		
I can convert times given in minutes into hours and minutes.		
I can convert times given in hours and minutes into minutes.		
I can solve a problem involving timed events, converting from one unit to another.		

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