

Lesson Printables

Be a rockstar and only
print what you need!



Planners: 2-3

Playing Cards
(print double-sided)
Sunlight: 4-9
Twilight: 10-15
Midnight: 16-21

Extras
Time Converters: 22
Recording Log: 23
Small Recording Log: 24
Rules: 25

Answers
Sunlight: 26
Twilight: 27
Midnight: 28

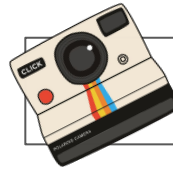
**Printing in the US? Scale to 'fit to printable area' in order to get the best print.*

LESSON 1: Time - Converting between different units of time

Starter	Main Activity and Input: Exploring the connection between different units of time.	Plenary
<p>Code Cruncher: Using the clues, can students deduce the correct numbers for each digital code?</p> <p>To support: 1. Which clues give students the most information to start with? (Use the clues that say 'none of the digits are correct' to cross off digits that don't work. From this, do the other clues provide students with more information?)</p> <p>To challenge: 1. Students could crack both codes. 2. Students could try making a code cracker of their own for someone else to solve.</p>	<p>Input:</p> <ol style="list-style-type: none">Slide 6 asks students what time increments they already know. Share ideas as a class. Note, for this lesson we will explicitly explore seconds, minutes, hours, days, months, weeks and years. Students might offer other time increments (centuries, decades, etc.). If these come up in conversation, it could be worth taking time to discuss what students already know so that you have an idea of any prior learning.Slide 7 shows different units of time. How are some of these units connected? Share ideas as a class. Slide 7 is animated to show each time connection.Slide 8 asks students how they could convert 5 days into hours and 4 hours into minutes. Give students time to explore and then share their thinking. Slide 9 models using tape diagrams to find each solution. Ask students if there is more than one way to reach each answer. E.g. To find how many minutes are in 4 hours you could add 60 four times or multiply 60 by 4.Slides 10 to 16 model the main activity: playing Time Challenge.<ul style="list-style-type: none">Deal out cards. Students call 3, 2, 1 and all flip over a card to reveal what you have 'won'.Look at the points value on each card to work out what unit of time you need to convert to. Your converted time is equal to the amount of points scored in that round. E.g. 120 seconds equals 120 points.Time sucker cards mean you lose time. (If students lose more points than they have, they just go back to 0.)The player with the most points when time is called or all the cards have been used is the winner. <p>Activity: Convert between different units of time.</p> <ol style="list-style-type: none">Print the double-sided game cards for each learning zone. This game could be played in pairs or groups of 4. Students could record their points on the recording logs found in the printables. <p>To support:</p> <ol style="list-style-type: none">Sunlight Zone uses whole units of time while other zones include fraction and decimal amounts.Print the time conversion cards for students to reference. See printables. <p>To challenge:</p> <ol style="list-style-type: none">Encourage students to use tape diagrams or number sentences to prove their thinking.Midnight Zone includes double conversions. E.g. How many seconds are in 1 hour?Students could put their cards in order from the shortest amount of time to the longest amount of time.	<p>Time Toss: Using a ball or soft object, shout a unit of time and toss it to a student. The student who catches the item, tells you an equivalent unit of time. E.g. 2 minutes, 120 seconds.</p> <p>Check for understanding: 1. Can students identify equivalent units of time?</p>

Things that might be useful for this lesson:

- Individual whiteboards:
 - Help students to record their thinking and share ideas with others.
- Print the time converter cards:
 - For students who need additional scaffolding.



Peek at the Printables:

Three sets of printable cards are displayed, each set corresponding to a different time zone: Sunlight Zone (yellow background), Twilight Zone (light blue background), and Midnight Zone (light green background). Each set includes a grid of 'Time Challenge Cards' with various time conversion problems and a 'Time Locker' card. The cards are arranged in a way that shows multiple examples of each type of card.

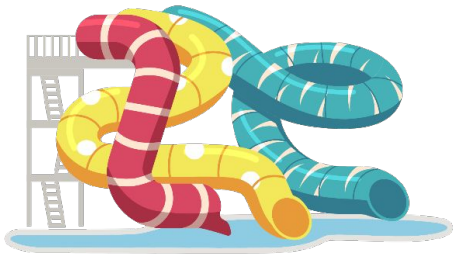


Greener Alternatives:

- Instead of playing the game, you could print and cut out a page or two of each of the time cards from each learning zone. Students could pick a card, convert the time and then pick up a new card.
- Alternatively, you could write time scenarios on whiteboards or sticky notes and put them up around your room in stations. Students could move from one station to another.



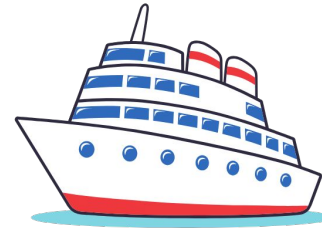
Sunlight Time Challenge Cards



You Win:
A 2 year pass to a water park for you and your friends.
Points Value:
days



You Win:
6 weeks of free ice cream sundaes.
Points Value:
days



You Win:
A 4 week cruise.
Points Value:
days



You Win:
A drone to use for 3 days.
Points Value:
hours



You Win:
Free camping for the month of April for you and your friends.
Points Value:
days



You Win:
1 year of free horse riding lessons.
Points Value:
weeks



You Win:
300 seconds in a free money grab machine.
Points Value:
minutes



You Win:
4 minutes shopping spree in your favourite shop.
Points Value:
seconds

Sunlight Time Challenge Cards



Sunlight Time Challenge Cards



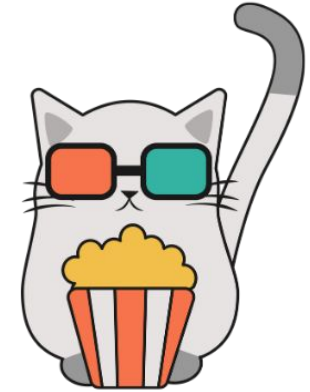
You Win:
14 days of free
surfing lessons.
Points Value:
weeks



You Win:
Free jetski for
36 months.
Points Value:
years



You Win:
Unlimited water
balloons for a
2 minute water fight.
Points Value:
seconds



You Win:
Free movie tickets
for 48 months.
Points Value:
years



You Win:
A 36 month pass to a
theme park.
Points Value:
years



You Win:
3 minutes of
squirting water at
your teacher.
Points Value:
seconds

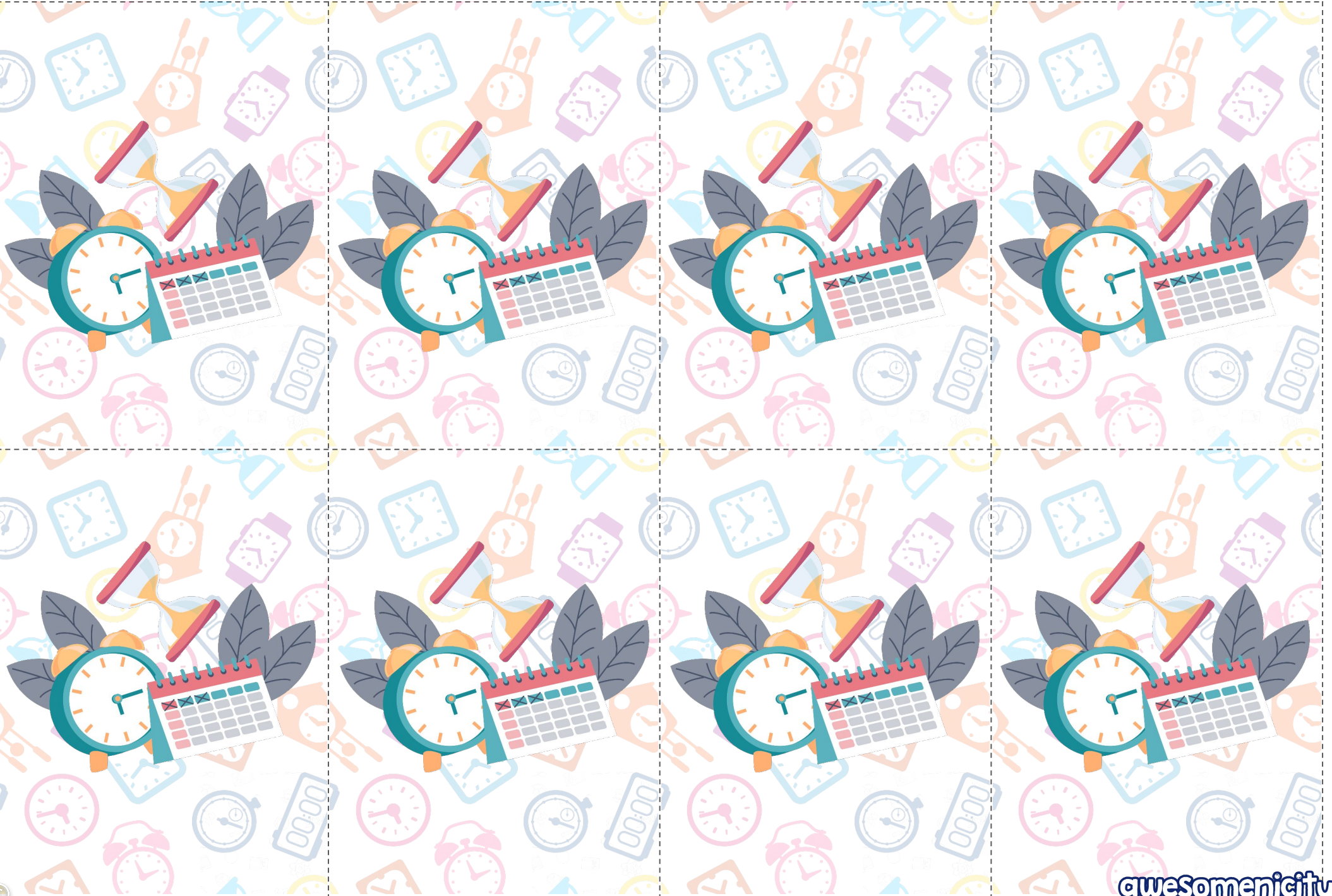


You Win:
Volunteering with
baby tigers for
2 years.
(1 leap year)
Points Value:
days



You Win:
A trampoline to use
for 5 years.
Points Value:
months

Sunlight Time Challenge Cards



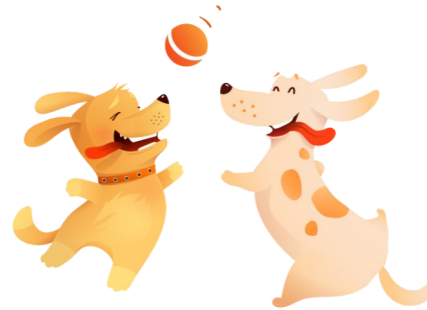
Sunlight Time Challenge Cards



You Win:
2 days of swimming
with dolphins.
Points Value:
hours



You Win:
120 seconds of
skydiving.
Points Value:
minutes



You Win:
28 days in a
sports/games camp.
Points Value:
weeks



You Win:
Kitten and puppy
cuddles for 2 days.
Points Value:
hours



Time Sucker
You lose:
2 years
Points Value:
days



Time Sucker
You lose:
5 weeks
Points Value:
weeks

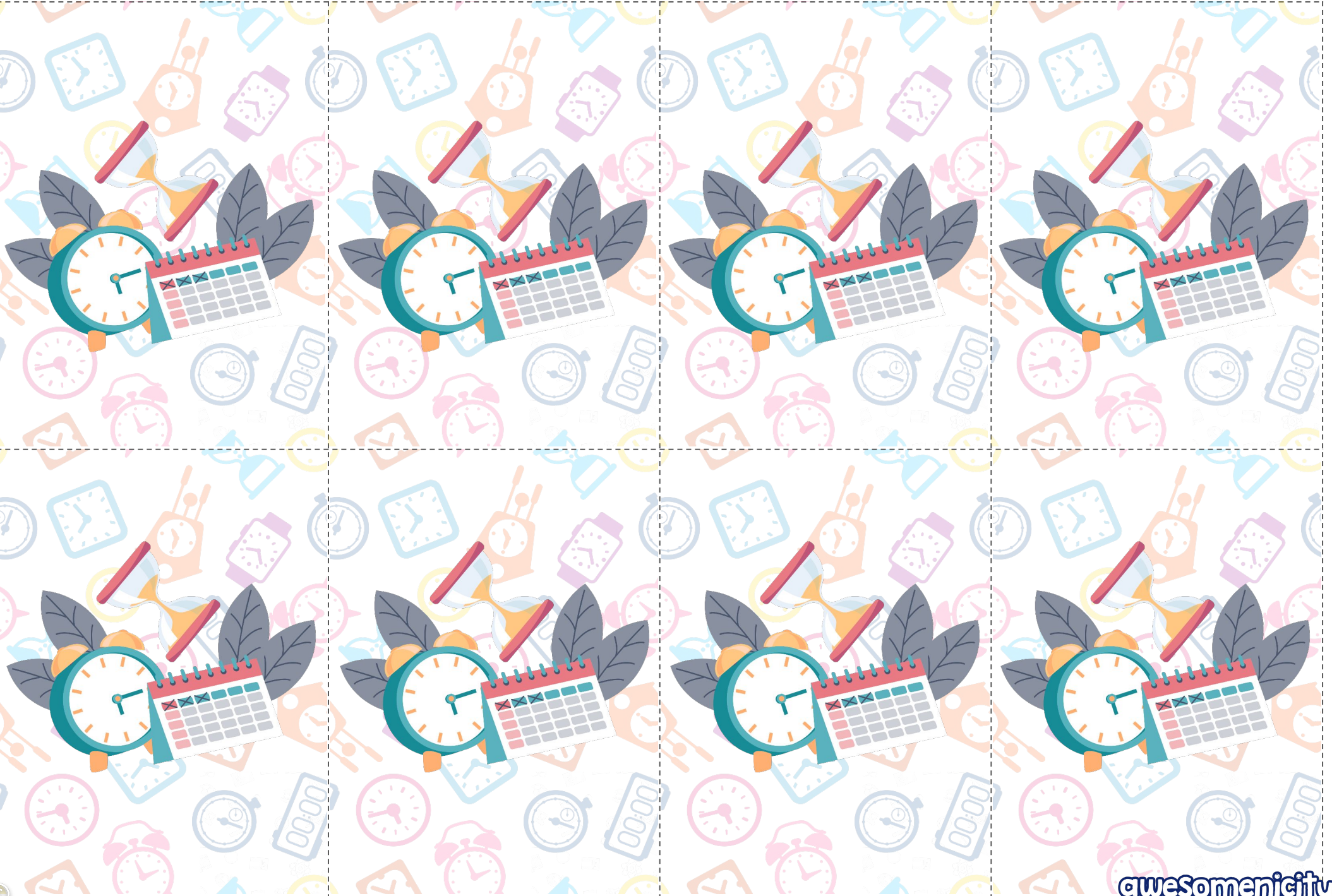


Time Sucker
You lose:
December
Points Value:
days

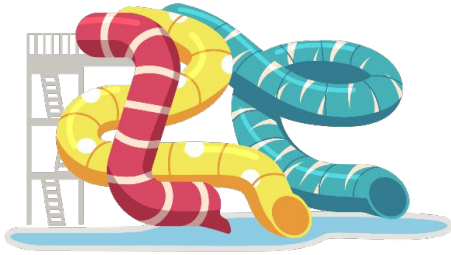


Time Sucker
You lose:
1 minute
Points Value:
seconds

Sunlight Time Challenge Cards



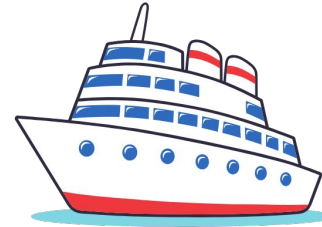
Twilight Time Challenge Cards



You Win:
A 2 year pass to a water park for you and your friends.
Points Value:
days



You Win:
4 weeks of free ice cream sundaes.
Points Value:
days



You Win:
A cruise for 1/2 a year.
Points Value:
months



You Win:
A drone to use for 3 days.
Points Value:
hours



You Win:
Free camping for the month of April for you and your friends.
Points Value:
days



You Win:
1 years worth of horse riding lessons.
Points Value:
weeks



You Win:
300 seconds in a free money grab machine.
Points Value:
minutes



You Win:
2 minutes shopping spree in your favourite shop.
Points Value:
seconds

Twilight Time Challenge Cards



Twilight Time Challenge Cards



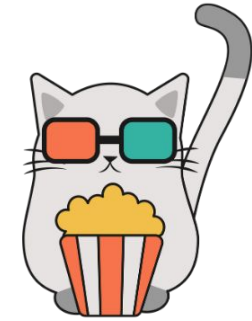
You Win:
1 and 1/2 years of
free surfing lessons!
Points Value:
months



You Win:
Free jetski for
36 months
Points Value:
years



You Win:
Unlimited water
balloons for a
4.5 minute water fight.
Points Value:
seconds



You Win:
Free movie tickets
for 48 months.
Points Value:
years



You Win:
A 63 day pass to a
theme park.
Points Value:
weeks



You Win:
4 days of squirting
water at your
teacher.
Points Value:
hours



You Win:
Volunteering with
baby tigers for
5 (normal) years.
Points Value:
months



You Win:
A trampoline to use
for 24 months.
Points Value:
years

Twilight Time Challenge Cards



Twilight Time Challenge Cards



You Win:
120 hours of swimming with dolphins.
Points Value:
days



You Win:
3 and 1/4 of a minute of free skydiving.
Points Value:
seconds



You Win:
28 days in a sports/games camp.
Points Value:
weeks



You Win:
Kitten and puppy cuddles for 1.5 hours.
Points Value:
minutes



Time Sucker
You lose:
2 years
Points Value:
days



Time Sucker
You lose:
5 weeks
Points Value:
days



Time Sucker
You lose:
December
Points Value:
days

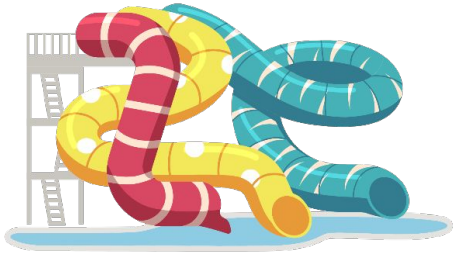


Friendly Time Sucker
Give:
3 minutes to another player in the game.
(You lose this amount)
Points Value:
seconds

Twilight Time Challenge Cards



Midnight Time Challenge Cards



You Win:

A pass for the month of May to a water park for you and your friends.

Points Value:
hours



You Win:

28 days of free ice cream sundaes.

Points Value:
hours



You Win:

A 1 and 1/4 of year long cruise.

Points Value:
months



You Win:

A drone to use for 3 days!

Points Value:
minutes



You Win:

Free camping for the month of April for you and your friends.

Points Value:
days



You Win:

24 hours worth of horse riding lessons.

Points Value:
minutes



You Win:

480 seconds in a free money grab machine.

Points Value:
minutes



You Win:

14 minutes shopping spree in your favourite shop.

Points Value:
seconds

Midnight Time Challenge Cards



Midnight Time Challenge Cards



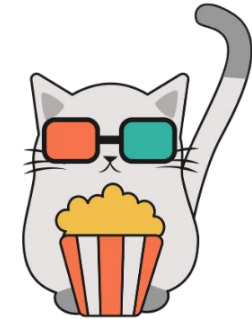
You Win:
3/4 of a year of free
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Points Value:
months



You Win:
Free jetski for
36 months.
Points Value:
years



You Win:
Unlimited water
balloons for a
4.5 minute water fight.
Points Value:
seconds



You Win:
Free movie tickets
for 48 weeks.
Points Value:
days



You Win:
A pass to a theme
park for 3/4 of
February in a
normal year.
Points Value:
hours



You Win:
Squirting water at
your teacher for
1/12 of a day.
Points Value:
seconds



You Win:
Volunteering with
baby tigers for
5 (one leap) years.
Points Value:
days



You Win:
A trampoline to use
for 7 weeks.
Points Value:
hours

Midnight Time Challenge Cards



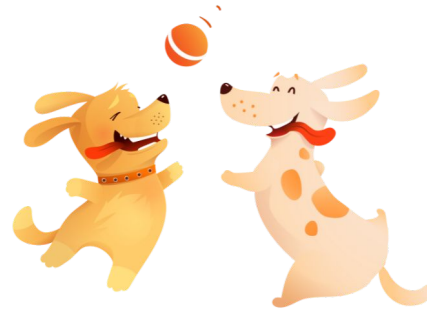
Midnight Time Challenge Cards



You Win:
168 hours of swimming with dolphins.
Points Value:
days



You Win:
8 and 1/4 of a minute of free skydiving.
Points Value:
seconds



You Win:
84 days in a sports/games camp.
Points Value:
weeks



You Win:
Kitten and puppy cuddles for 6.5 hours.
Points Value:
minutes



Time Sucker
You lose:
2 days
Points Value:
minutes



Time Sucker
You lose:
3 weeks
Points Value:
hours



Time Sucker
You lose:
December
Points Value:
days



Friendly Time Sucker
Give:
1/2 an hour to another player in the game.
(You lose this amount)
Points Value:
seconds

Midnight Time Challenge Cards



Time Converters

1 minute	1 hour	1 day	1 week	1 month	1 year
60 seconds	60 minutes	24 hours	7 days	4 weeks	12 months
					365 days

1 minute	1 hour	1 day	1 week	1 month	1 year
60 seconds	60 minutes	24 hours	7 days	4 weeks	12 months
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1 minute	1 hour	1 day	1 week	1 month	1 year
60 seconds	60 minutes	24 hours	7 days	4 weeks	12 months
					365 days

Recording Log

My original prize	My prize in converted time	Total Points

Small Recording Logs

My original prize	My prize in converted time	Total Points

My original prize	My prize in converted time	Total Points

Time Challenge Rules

1. Shuffle cards and place them upside down in a pile.
2. Each player picks up 1 card and flips it over.
3. Convert the amount of time on the card into the unit of time that matches the points value.
→ Your converted time is equal to the number of points you win.
4. Record your points.
5. Repeat.
6. If you get a 'Time Sucker', follow the instructions on the card.
→ If you lose more points than you have, your points total goes down to 0.
7. The player with the most points when the cards run out or time is called is the winner!



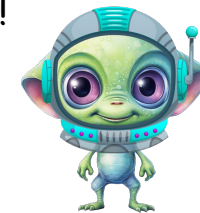
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Time Challenge Rules

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Sunlight Answers

Sunlight Answers	
2 years	730 days
6 weeks	42 days
4 weeks	28 days
3 days	72 hours
April	30 days
1 year	52 weeks
300 seconds	5 minutes
4 minutes	240 seconds
14 days	2 weeks
36 months	3 years
2 minutes	120 seconds
48 months	4 years

Sunlight Answers	
36 months	3 years
3 minutes	180 seconds
2 years (1 leap)	731 days
5 years	60 months
2 days	48 hours
120 seconds	2 minutes
28 days	4 weeks
2 days	48 hours
2 years	730 days
5 weeks	35 days
December	31 days
1 minute	60 seconds

Twilight Answers

Twilight Answers	
2 years	730 days
4 weeks	28 days
1/2 year	6 months
3 days	72 hours
April	30 days
1 year	52 weeks
300 seconds	5 minutes
2 minutes	120 seconds
1.5 years	18 months
36 months	3 years
4.5 minutes	270 seconds
48 months	4 years

Twilight Answers	
63 days	9 weeks
4 days	96 hours
5 years	60 months
24 months	2 years
120 hours	5 days
3 $\frac{1}{4}$ minutes	195 seconds
28 days	4 weeks
1.5 hours	90 minutes
2 years	730 days
5 weeks	35 days
December	31 days
3 minutes	180 seconds

Midnight Answers

Midnight Answers	
May (31 days)	744 hours
28 days	672 hours
$1 \frac{1}{4}$ year	15 months
3 days (72 hrs)	4,320 minutes
April	30 days
24 hrs	1,440 minutes
480 seconds	8 minutes
14 minutes	840 seconds
$\frac{3}{4}$ years	9 months
36 months	3 years
4.5 minutes	270 seconds
48 weeks	336 days

Midnight Answers	
$\frac{3}{4}$ Feb (21 days)	504 hours
1/12 day (2 hrs)	7,200 seconds
5 years (1 leap)	1,826 days
7 weeks	1,176 hours
168 hrs	7 days
$8 \frac{1}{4}$ minute	495 seconds
84 days	12 weeks
6.5 hours	390 minutes
2 days	2,880 minutes
3 weeks	504 hours
December	31 days
$\frac{1}{2}$ hour (30 min)	1,800 seconds