Teaching notes

Year group: Y8.

Learning objectives/outcomes (see slides 1 and 14 of the PowerPoint):
- describe my caffeine intake
- understand the recommended daily allowance of caffeine
- assess whether caffeinated energy drinks are dangerous or not.

Resources

Internet access is needed, including to YouTube.
- PowerPoint slides (downloadable from www.teachitcitizenship.co.uk), by typing 22430 into the quick search box).
- News articles – online in class or printed off in advance
  ‘Morrisons bans children from buying high-energy drinks’ (Guardian)
  http://www.theguardian.com/society/2013/nov/22/morrisons-bans-high-energy-drinks-children
  ‘Teenager collapsed after becoming addicted to Red Bull’ (Telegraph)
- Online videos
  Kids’ caffeine intake should be controlled (BBC Newsround)
  http://www.bbc.co.uk/newsround/23251617
  Red Bull gives you wings 2000 (YouTube)
  http://www.youtube.com/watch?v=K31dg86OmuM
- Table – How much caffeine are you drinking?
  (p.4 below)
- Chart – Caffeine levels in milligrams
  (p.5 below)
- Writing task / Homework – respond to a post on TheSite.org
  (slide 11 or p.6 below)
- Sticky notes or mini whiteboards
  for the plenary activity

Warmer

Slide 2 – Which can/bottle has the most/least sugar?
Answer: see slide 3.

Sources of information:
- Cola: http://www.coca-cola.co.uk/brands/coca-cola.html
- Fizzy fruit drink: http://www.coca-cola.co.uk/brands/oasis.html
- Recommended daily maximum:
Is too much caffeine dangerous?

Main activities

Slide 4 – What problems can all this sugar lead to?
Get students to list ideas in pairs then feed back to the class.
Click to display the answers one by one.

Slide 5 – Discuss the questions with a partner
Students discuss questions such as ‘What is an energy drink?’ and ‘Are energy drinks suitable for breakfast?’

Slide 6 – What are the other problems associated with energy drinks?
Divide the class into student A and student B.
Pair A students together and B students together to read their articles and highlight the problems.
Then pair the As with the Bs to share what they have learned.

Problems from text A (‘Morrisons bans children from buying high-energy drinks’):
- Children who consume caffeine before physical activity can have raised blood pressure.
- Some adults have died from consuming too much caffeine.
- One in 20 teenagers has a can of energy drink instead of breakfast.
- It is difficult to ban them to under 16s as people have difficulty proving they are 16.

Problems from text B (‘Teenager collapsed after becoming addicted to Red Bull’):
- Naomi spent all her money to buy energy drinks and even borrowed money from her friends.
- After the high from drinking one, she would feel tired and unhappy, so she would drink another.
- She struggled to stay awake in class.
- Doctors warned her she could have a heart attack.
- Withdrawal symptoms include: headaches; feeling cross; tingling in your arms, legs and fingers.
- Caffeine intoxication can lead to: heart irregularities, agitation and in rare cases death.

Slide 7 – Should energy drinks be banned?
Students discuss the questions.
Click to reveal the link to the BBC Newsround video.
Click again to reveal the amount of caffeine in an energy drink.

Answers from the video:
- How much caffeine is there in a 250ml can of energy drink?
  80mg per 250ml can = the same amount as in 3 cans of cola
- How do you feel when you drink these drinks?
  You feel more awake, so that’s why people drink them in the mornings.
- How many times a week do you drink them?
  Three.
- How would you feel if grown-ups told you that you weren’t allowed to drink these drinks?
  I wouldn’t be that happy about it, but there’s always other drinks we can have.
Is too much caffeine dangerous?

**Slide 8 – How much caffeine are you drinking?**

Hand out the table from p.4 below and have students complete it individually with the number of drinks.

Remind them to include tea and coffee, as these also contain caffeine.

**Slide 9 – Caffeine levels in milligrams**

Hand out the chart from p.5 below and ask students to find:

- a type of food which contains caffeine (i.e. chocolate)
- the maximum recommended intake for someone of their age (around 80mg).

Have students calculate their actual caffeine consumption.

**Sources of information:**

- [http://www.coca-cola.co.uk/health/caffeine-in-your-can.html](http://www.coca-cola.co.uk/health/caffeine-in-your-can.html)
- [http://www.bbc.co.uk/news/health-15982904](http://www.bbc.co.uk/news/health-15982904)

Note that the sources vary as to exactly how much caffeine is in a can of cola (between 32 and 45mg). This actually makes the 80mg contained in a 250ml can of energy drink equivalent to between 2.5 and 1.8 cans of cola. You could encourage critical thinking and ask students if there are any figures which are different in the different sources of information they have received!

**Slide 10 – Talking partners**

Students discuss in pairs the questions about their caffeine consumption.

**Slide 11 – Marketing of energy drinks**

Students watch the Red Bull advert and discuss which age group they think it is aimed at.

**Writing task / Homework**

**Slide 12 – Respond to a post on TheSite.org**

TheSite ([www.thesite.org](http://www.thesite.org)) is a website where young people can find information about everyday problems such as relationships, money, and drink and drugs. They can also post questions to be answered by experts or post comments on the discussion board for their peers to respond to.

Encourage students to write at least 150 words.

**Plenary**

**Slide 13 – What do I think now?**

You could have students raise their hands or move to one side of the room to show that they have changed their opinion about energy drinks.

You could use sticky notes or mini whiteboards for students to write the most important thing they have learned.
How much caffeine are you drinking?

Complete the table with the number of caffeinated drinks. Don’t forget to include cola, tea and coffee!

<table>
<thead>
<tr>
<th></th>
<th>Before 11am</th>
<th>11am – 2pm</th>
<th>2pm – 6pm</th>
<th>6pm till bed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td></td>
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<tr>
<td>Tuesday</td>
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<tr>
<td>Sunday</td>
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</tr>
</tbody>
</table>
## Caffeine levels in milligrams

<table>
<thead>
<tr>
<th>Recommended daily maximum:</th>
<th>Content in food and drink:</th>
</tr>
</thead>
<tbody>
<tr>
<td>for a healthy adult</td>
<td>400mg</td>
</tr>
<tr>
<td>for a pregnant woman</td>
<td>200mg</td>
</tr>
<tr>
<td>for a teenager of 50kg</td>
<td>125mg</td>
</tr>
<tr>
<td>for a child of 10–12</td>
<td>80–85mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Content in food and drink:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>175mg</td>
<td>60ml ‘shot style’ energy drink</td>
</tr>
<tr>
<td>160mg</td>
<td>500ml can of energy drink</td>
</tr>
<tr>
<td>140mg</td>
<td>mug of filter coffee</td>
</tr>
<tr>
<td>80mg</td>
<td>250ml can of energy drink</td>
</tr>
<tr>
<td>80mg</td>
<td>mug of instant coffee</td>
</tr>
<tr>
<td>75mg</td>
<td>/ cup of filter coffee</td>
</tr>
<tr>
<td>65mg</td>
<td>mug of tea</td>
</tr>
<tr>
<td>50mg</td>
<td>cup of instant coffee</td>
</tr>
<tr>
<td>47mg</td>
<td>50g bar of plain chocolate</td>
</tr>
<tr>
<td>32mg</td>
<td>cup of tea</td>
</tr>
<tr>
<td>25mg</td>
<td>500ml can of cola</td>
</tr>
<tr>
<td>25mg</td>
<td>50g bar of milk chocolate</td>
</tr>
</tbody>
</table>
Writing task / homework

Jack, aged 10, is worried about his caffeine consumption and has posted this question on TheSite.org:

17:50 PM

jacking

I have an energy drink for breakfast and then I have another one with a big bar of chocolate at break time. My mum says this is too much caffeine, but I feel fine. Is it really too much?

Reply

As an informed consumer, what advice would you give him?

Write down your response.

Support your answer with:

a) knowledge/experience of energy drinks

and

b) information from this lesson.

Swap your response with a partner. Have they thought of anything that you forgot?

Writing task / homework

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and

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Swap your response with a partner. Have they thought of anything that you forgot?
Is too much caffeine dangerous?

By the end of this lesson I
will be able to …

• describe my caffeine intake
• understand the recommended daily allowance of caffeine
• assess whether caffeinated energy drinks are dangerous or not.

Look at these drinks:

A 500ml can of cola
A 250ml can of energy drink
A 500ml bottle of fizzy fruit drink

Which can/bottle has the most sugar?
Which has the least sugar?

They have around half the recommended maximum in just one serving!

- A 500ml can of cola: 53.0g
- A 250ml can of energy drink: 27.5g
- A 500ml bottle of fizzy fruit drink: 21g

Recommended daily maximum intake of sugar =
men: 70g (13 teaspoons); women: 50g (10 teaspoons)

What problems can all this sugar lead to?

Sugar rush
Concentration difficulties
Decaying teeth
Diabetes
Mood swings
Weight gain
Premature ageing

Discuss the questions with a partner

What is an energy drink?
How often should energy drinks be consumed by young people?
Who decides which ingredients go into energy drinks?
Are energy drinks suitable for breakfast?

How many of you drink energy drinks?
What attracts you to a particular energy drink?
What techniques do advertisers use to sell energy drinks to young people?

As well as sugar, what are the other problems associated with energy drinks?

Group A students, read this article:
http://www.theguardian.com/society/2013/nov/22/morrisons-bans-high-energy-drinks-children

Group B students, read this article:

Highlight all the problems associated with drinking energy drinks.

Now pair up, A + B, and share what you’ve learned.
Now watch this video: http://www.bbc.co.uk/newsround/23251617

What are the answers from the video? Do you agree? Why / why not?

Discuss these questions:

- How much caffeine is there in a 250ml can of energy drink?
  - 80mg per 250ml can
  = the same amount as in 3 cans of cola

- How do you feel if/when you drink these drinks?

- How many times a week do you drink them?

- How would you feel if adults told you that you weren’t allowed to drink these drinks?

80mg per 250ml can = the same amount as in 3 cans of cola

Should energy drinks be banned?

Caffeine is legal, but it is a drug and too much of it is bad for us.

Before
11am 11am – 2pm 2pm – 6pm 6pm till bed

<table>
<thead>
<tr>
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How much caffeine are you drinking?

Complete the table on the handout

Use this chart to work out how much caffeine you are consuming each day.

- How much caffeine am I consuming daily?
- Have I felt any negative effects (e.g. sleep problems or feeling anxious)?
- Can I decrease/eliminate caffeine from my diet?
- How might my caffeine consumption affect my learning?

Am I consuming too much caffeine?

Talking partners

- How much caffeine am I consuming daily?
- Have I felt any negative effects (e.g. sleep problems or feeling anxious)?
- Can I decrease/eliminate caffeine from my diet?
- How might my caffeine consumption affect my learning?

Some people argue that energy drinks are marketed at children.

Watch the following advert: http://www.youtube.com/watch?v=K31dQ9oGwuM

Which age group do you think it is aimed at?

Jack, aged 10, is worried about his caffeine consumption and has posted this question on TheSite.org:

'I have an energy drink for breakfast and then I have another one with a big bar of chocolate at break time. My mum says this is too much caffeine, but I feel fine. Is it really too much?'

Write down your response.

Support your answer with:
- a) knowledge/experience of energy drinks
- b) information from this lesson.
Have I changed my opinion about energy drinks because of this lesson?

What is the most important thing that I've learned in this lesson?

Is too much caffeine dangerous?

I can …
• describe my caffeine intake
• understand the recommended daily allowance of caffeine
• assess whether caffeinated energy drinks are dangerous or not.