Mathematicians work out the perfect cup of coffee

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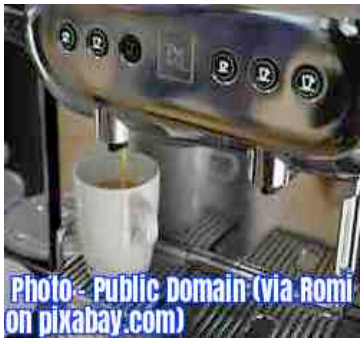

Mathematicians are using their analytical skills to understand what makes the perfect cup of coffee. It seem be odd that a team of mathematicians is trying to establish what is behind the perfect cup of coffee until you realize that coffee consists of over 1,800 chemical components. If you combine these with the different ways of brewing coffee, it makes sense because there are a lot of numbers involved. Mathematicians from universities in Ireland and England used some complex calculations to determine how to make an ideal cuppa. Researchers Dr William Lee and Dr Kevin Moroney focused on what happens to coffee as it passes through a variety of filter coffee machines.

The scientists hope their research will change the way coffee machines are made. Dr Lee told the BBC News: "Our overall idea is to have a complete mathematical model of coffee brewing that you could use to design coffee machines, rather like we use a theory of fluid and solid mechanics to design racing cars." In the near future, coffee lovers might be able to adjust many of the variables that affect the taste of the coffee as it is filtered and brewed. These include how hot the water is, how fast the water flows, the size coffee beans are ground into, the length of time it is brewed, and more. The research is published in the journal of the Society for Industrial and Applied Mathematics.

Sources: *BBC.com / phys.org / dailycoffeenews.com*

Writing

There is no such thing as a perfect cup of coffee. Discuss.

Chat

Talk about these words from the article.

analytical / skills / perfect / chemical / components / sense / complex / calculations / research / overall / idea / design / mechanics / lovers / brewed / brewed / published

True / False

a) The article says it might seem odd for mathematicians to analyze coffee. T / F

b) The article says there are over 1,800 types of coffee in the world. T / F

c) The article says there are a lot of numbers involved in analyzing coffee. T / F

d) The calculations the mathematicians used were fairly straightforward. T / F

e) The scientists hope coffee machines will be made differently. T / F

f) The scientists want to analyze the perfect racing car next. T / F

g) The article says there will be more coffee lovers in the near future. T / F

h) The research has been published in a journal. T / F

Synonym Match

(The words in **bold** are from the news article.)

1.	**analytical**	a.	crushed
2.	**odd**	b.	prove
3.	**establish**	c.	assortment
4.	**combine**	d.	general
5.	**variety**	e.	logical
6.	**change**	f.	printed
7.	**overall**	g.	influence
8.	**affect**	h.	strange
9.	**ground**	i.	alter
10.	**published**	j.	mix

Discussion – Student A

a) What is the perfect cup of coffee?

b) What do you think of coffee?

c) How important is coffee in your culture?

d) Is coffee good or bad for you?

e) What do you think of mathematicians making the perfect cup of coffee?

f) What do you think of cafes and coffee shops?

g) What is your country's national drink?

h) Is filter coffee or instant coffee best?

Phrase Match

1. Mathematicians are using their
2. It might seem
3. establish what is behind
4. complex
5. what happens to coffee as it
6. change the way coffee machines
7. have a complete mathematical
8. coffee
9. the size coffee beans are
10. the length of time it is

a. the perfect cup of coffee
b. brewed
c. calculations
d. are made
e. odd
f. lovers
g. ground into
h. analytical skills
i. model
j. passes through

Discussion – Student B

a) What other drinks should scientists find the perfect version of?

b) Will all food and drink taste perfectly in the future?

c) What would you like to know about coffee?

d) At what age is it OK to start drinking coffee?

e) What different types of coffee are there?

f) What do you think of the price of coffee?

g) When is the best time to drink coffee?

h) What questions would you like to ask the researchers?

Spelling

1. using their laytcaalin skills
2. over 1,800 chemical mosnnteocp
3. there are a lot of numbers vovneldi
4. used some pclxmoe calculations
5. rnideteme how to make an ideal cuppa
6. a yraitve of filter coffee machines
7. Our oarvlel idea
8. a eyroht of fluid and solid mechanics
9. adjust many of the arvlbiase
10. as it is filtered and rewedb
11. These uicdeln how hot the water is
12. The research is published in the njoualr

Answers – Synonym Match

1. e	2. h	3. b	4. j	5. c
6. i	7. d	8. g	9. a	10. f

Role Play

Role A – Coffee
You think coffee has the best taste. Tell the others three reasons why. Tell them things that are wrong with the taste of their things. Also, tell the others which is the least tasty of these (and why): lemon, garlic or salt.

Role B – Lemon
You think lemon has the best taste. Tell the others three reasons why. Tell them things that are wrong with the taste of their things. Also, tell the others which is the least tasty of these (and why): coffee, garlic or salt.

Role C – Garlic
You think garlic has the best taste. Tell the others three reasons why. Tell them things that are wrong with the taste of their things. Also, tell the others which is the least tasty of these (and why): lemon, coffee or salt.

Role D – Salt
You think salt has the best taste. Tell the others three reasons why. Tell them things that are wrong with the taste of their things. Also, tell the others which is the least tasty of these (and why): lemon, garlic or coffee.

Speaking – Taste

Rank these with your partner. Put the things with the best taste at the top. Change partners often and share your rankings.

- chocolate
- salt
- chilli
- banana
- coffee
- lemon
- garlic
- honey

Answers – True False

a	T	b	F	c	T	d	F	e	T	f	F	g	F	h	T

Answers to Phrase Match and Spelling are in the text.

