Microsoft Innovative Educator Expert

Reducing cognitive load with infographics, icons and signs

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BRISBANE BOYS' COLLEGE

The Plan

1. Introduction to cognitive load
2. Example of cognitive load when driving
3. How driving signs reduce cognitive load
4. Examples of use of infographics, icons and signs

5. Designed infographics, icons and signs to reduce cognitive load (and where to download)

6. Quick demonstration (how to) of creating infographics, icons and signs using
    1. PowerPoint
    2. OneNote

7. Bus ways and bikeways – behaviour control
8. Using colour coding for collaborative work and behaviour control
9. Examples of student behaviour when colour coding is used

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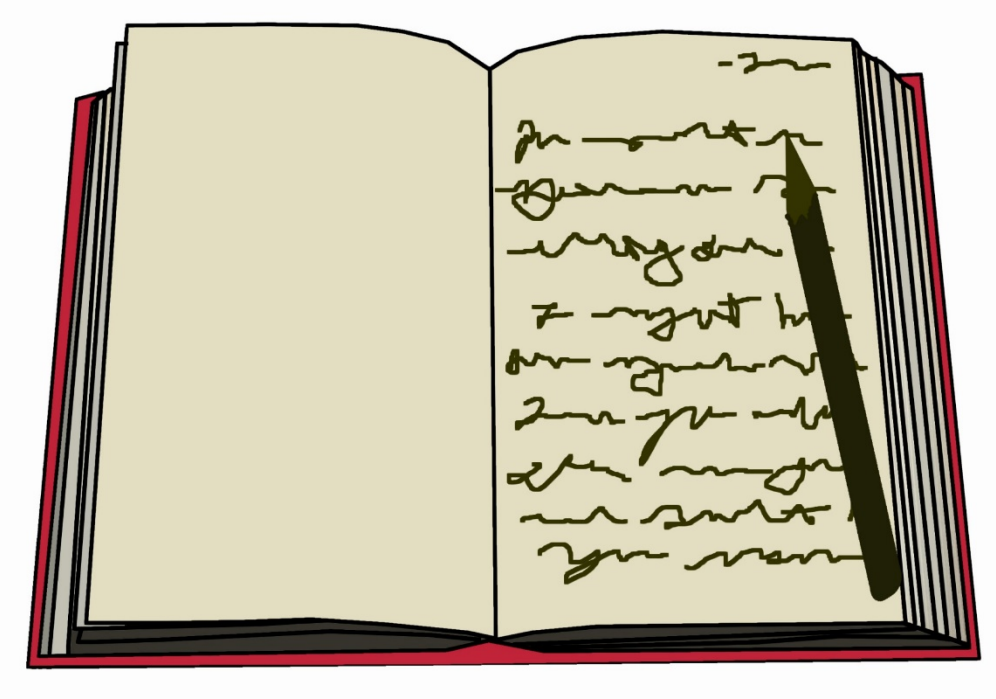
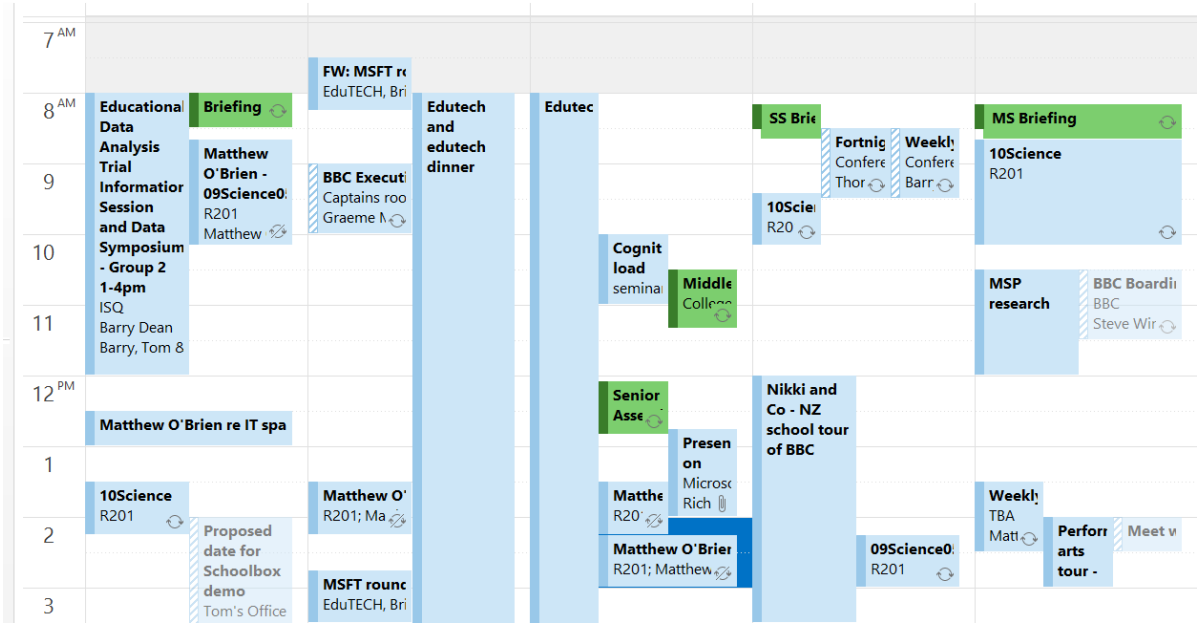
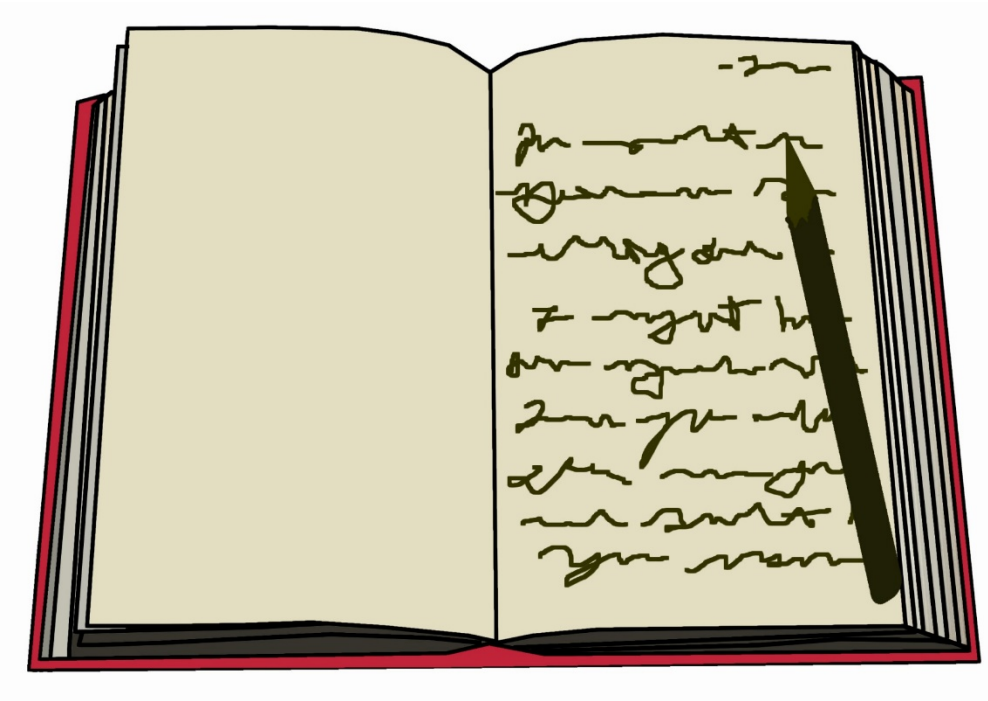
What is cognitive load

What is cognitive load



What is cognitive load





What is cognitive load


GIVE
WAY


100


FORM
1
LANE


LEFT
LANE
ENDS
MERGE
RIGHT


80


EXIT
SPEED
60
km/h


NO
STOPPING
ON
MOTORWAY


WORK
SITE
SLOW VEHICLES
MERGING AHEAD
150m


COBB & CO
TOURIST DRIVE
USE THIS EXIT


PROHIBITED
ON
MOTORWAY
PEDESTRIANS
ANIMALS
TRACTORS
MOPEDS


50
IN BUILT-UP
AREAS
UNLESS
OTHERWISE
SIGNED


VEHICLE
INSPECTION
SITE
ROADWORK
1km AHEAD


NO
ENTRY
AUTHORISED
VEHICLES
EXCEPTED
GATE
E22

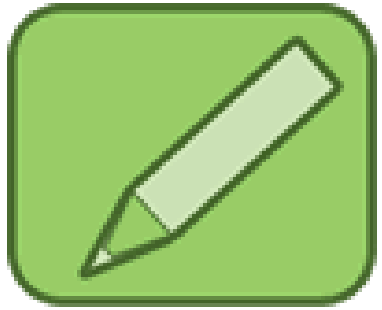

70
AHEAD


SCHOOL

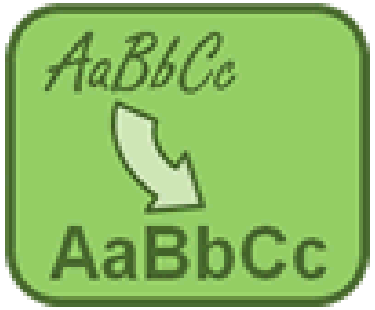

EMERGENCY
STOPPING
BAY AHEAD
300 m


CLEARANCE
6.1 m

- Substitution
  - in which the technology is just used to do what has always been done
- Augmentation
  - where the technology adds something new to what has always been done
- Modification
  - where the technology changes what has always been done, adding new dimensions and taking away some redundancies
- Redefinition
  - in which the learning environment is defined in a new way that transforms the education space.



Use the Stylus



Type

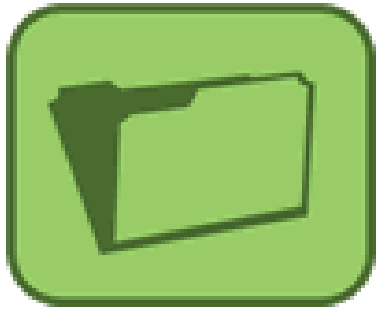
Don’t use web

Do use web

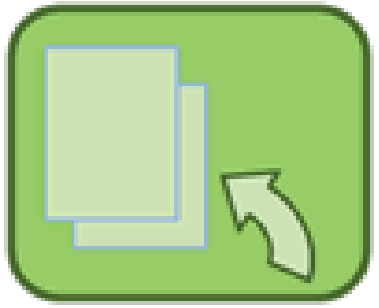
Right (Correct)

Wrong (Incorrect)

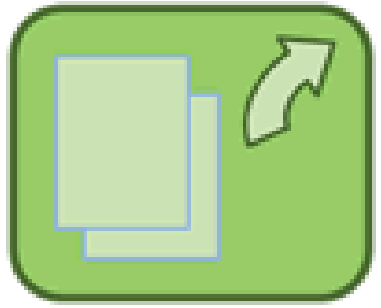
Save



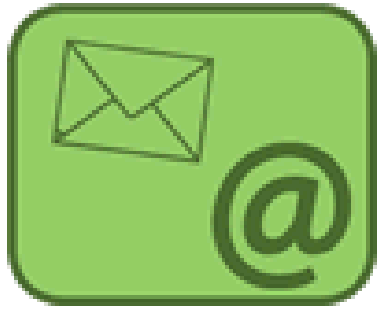
New Folder



Document sent to you



Send your document to me

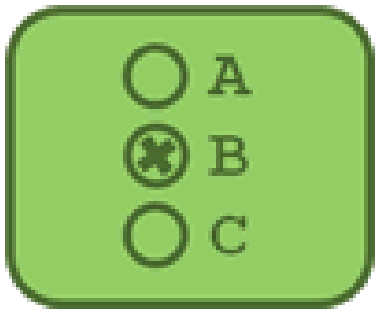


Email

Time limit

You will be timed

Status
(red, yellow, green)



Multi-choice quiz

Question

Information

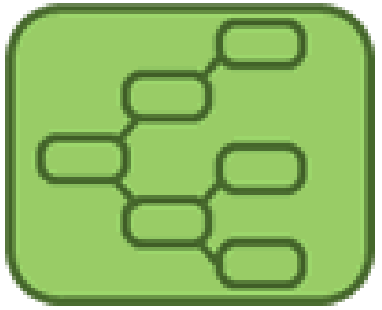
Important

Examine

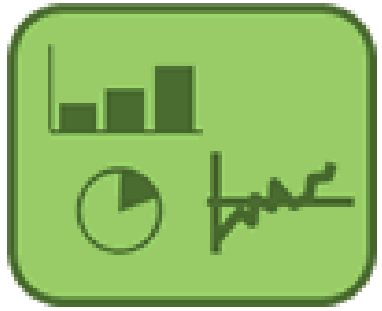
Look

Idea

Tabulate
(draw table)



Flow chart
(Concept map)



Graph

Calculate

RESULTS

RESULTS

Free stuff (all these icons)!

www.educationstylus.com

arch “cognitive”

Exit presentation

- Show how to use PowerPoint for icons and infographics

Go to OneNote

- Show how to use OneNote for images
- Show how to make templates
- Show how to make linked notes to calendar

- Substitution
  - in which the technology is just used to do what has always been done
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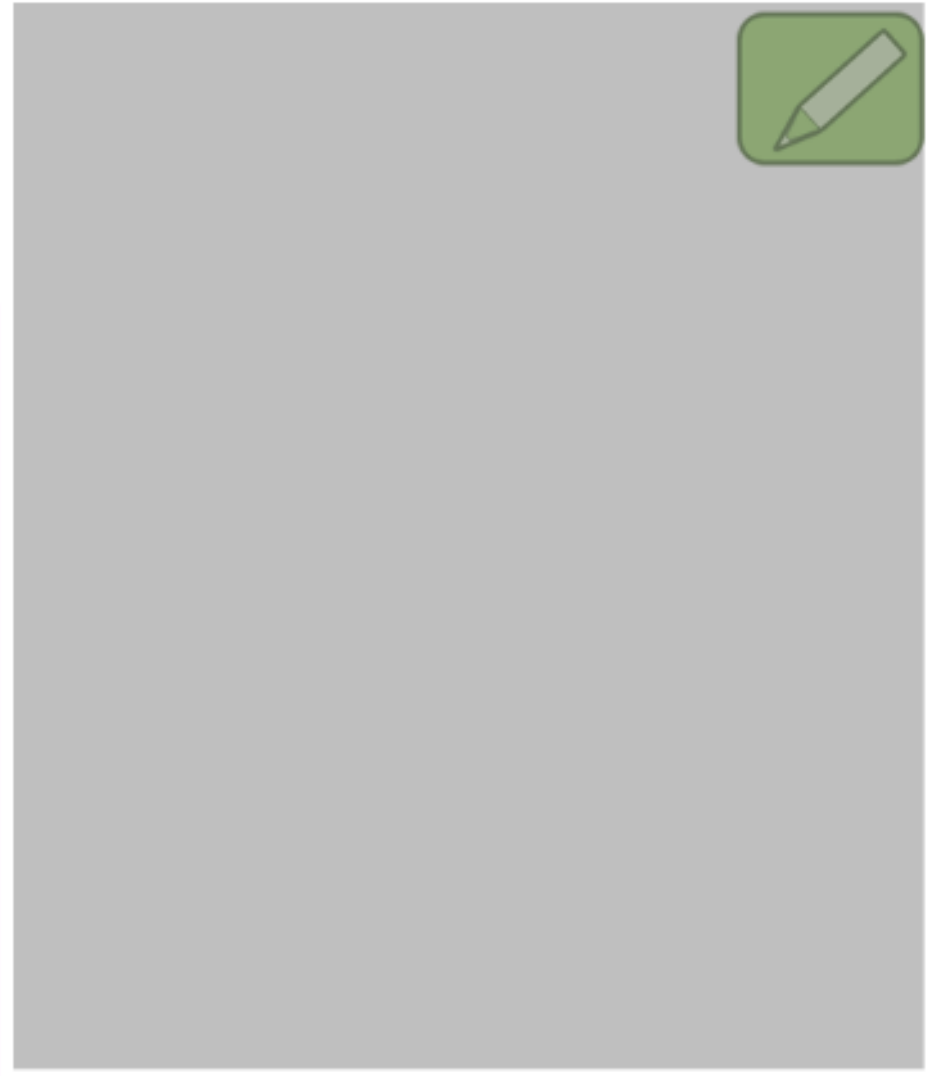
MOTORWAY
UPGRADE
NEXT 8 KM

Use $\Delta H = mC\Delta T$ to determine the ΔH of a reaction with the following results:

- Initial mass of item burnt = 235.9g
- Final mass of item burnt = 1.7g
- Mass of water = 345.2g
- Initial water temp = 10.2 ^{o}C
- final water temp = 65.2 ^{o}C
- *specific heat of water = 4.184 J/g^{o}C*



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Teacher space
(I promise I WILL write here)

Student space
(I promise I WON'T write here)

Reflection space
(What do you need to do next time)
(What did you learn)

Use $\Delta H = mC\Delta T$ to determine the ΔH of a reaction with the following results:

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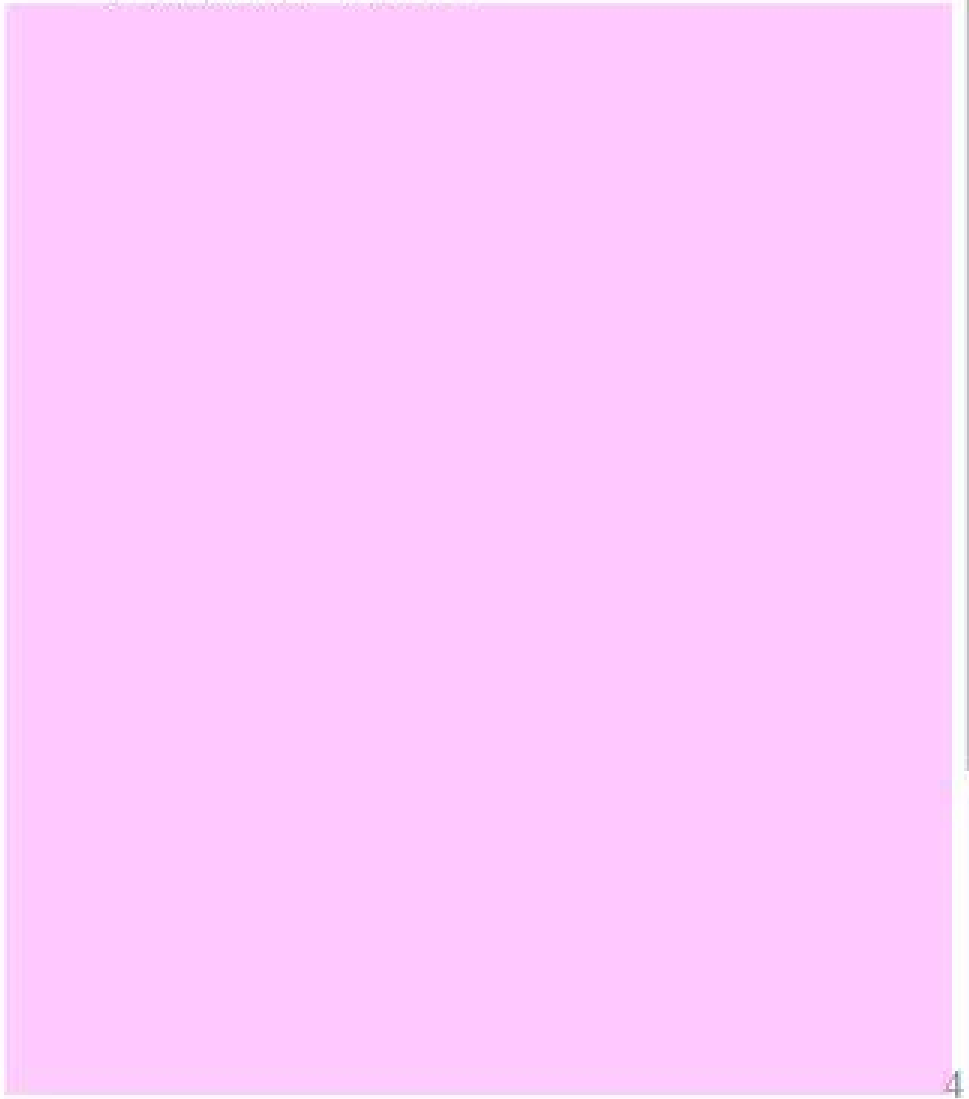

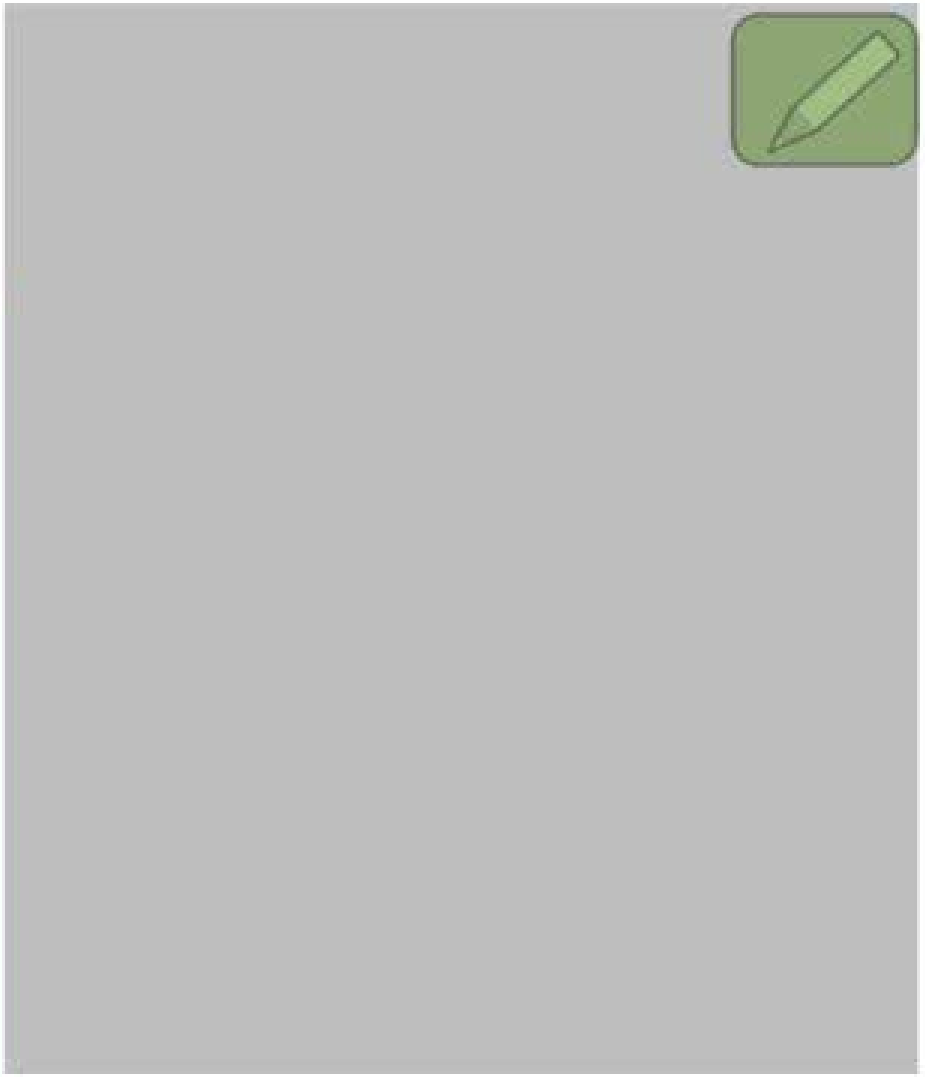

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$\Delta H = MC\Delta t$

$M = 345.2 + 1.7 + 235.9$

$= 582.8g$

$\Delta t = 10.2 - 65.2$

$= -55°C$

$C = 4.184 J/g°C$

$\Delta H = 582.8g \times 4.184 J/g°C \times -55°C$

$\Delta H = -134113.936 J$

$= -134.114 KJ$ Exothermic

Use $\Delta H = mC\Delta T$ to determine the ΔH of a reaction with the following results:

- Initial mass of item burnt = 235.9g
- Final mass of item burnt = 1.7g
- Mass of water = 345.2g
- Initial water temp = 10.2 °C
- Final water temp = 65.2 °C
- *specific heat of water = 4.184 J/g°C*

$\Delta H = mC\Delta T$

$m(H_2O) = 345.2g$

$C = 4.184\ J/g \cdot °C$

ΔT = initial − final

$= 10.2°C - 65.2°C$

$= -55°C$

sub in values

$\Delta H = 345.2g \times 4.184\ J/g \cdot °C \times -55°C$

$= -79437\ J$

or

$-79.4\ kJ$

$\Delta H = mC\Delta t$

$M = 345.2$

$\Delta t = 10.2 - 65.2$

$= -55°C$

$C = 4.184\ J/g°C$

$\Delta H = 345.2g \times 4.184\ J/g°C \times -55°C$

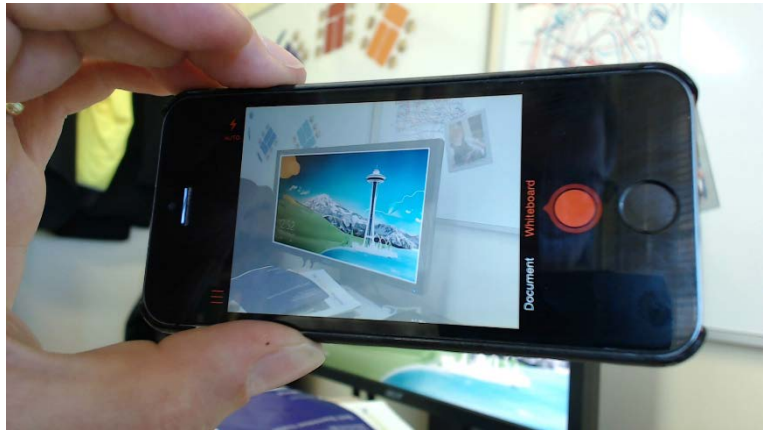
$\Delta H = -79437.424$

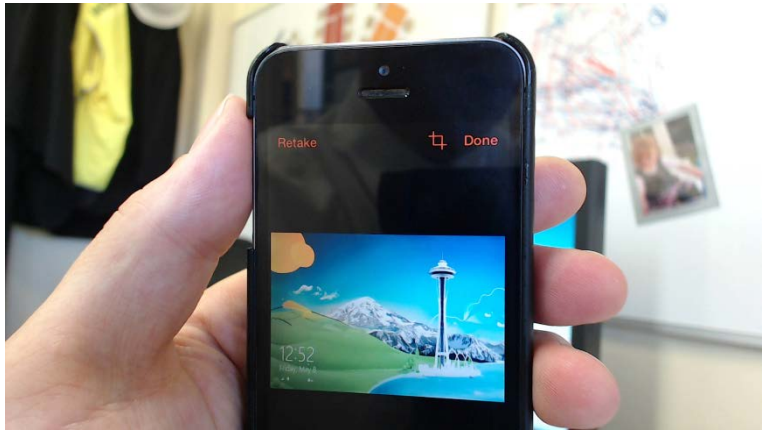
$= -79.4\ kJ$ Exothermic

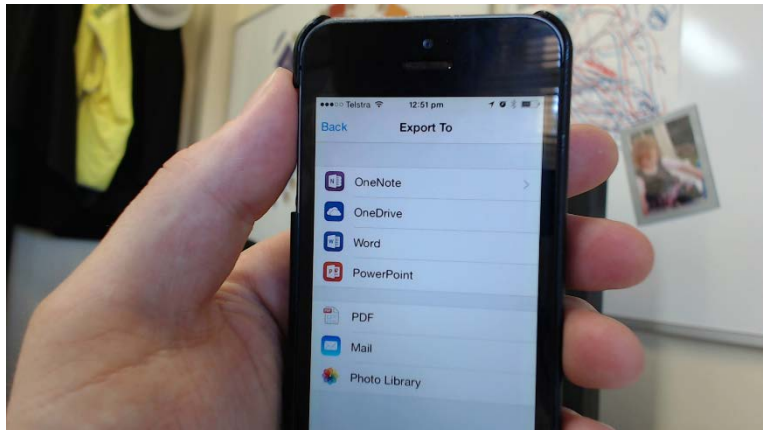
BONUS!

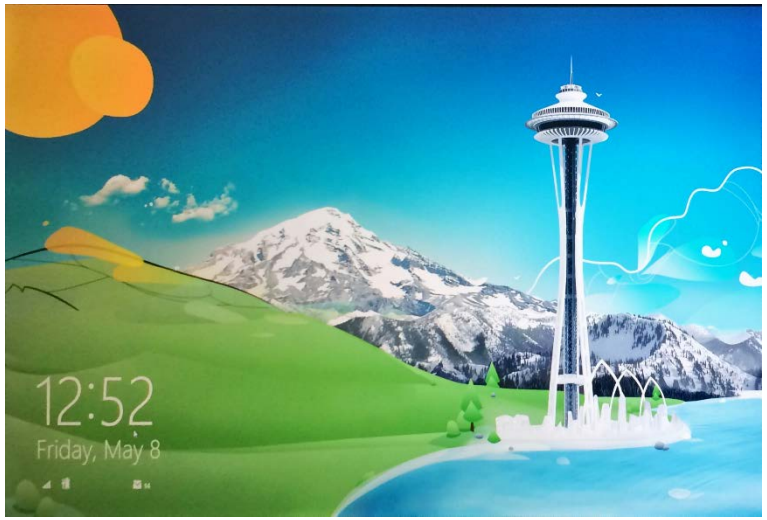
Office Lens

- Windows phone – http://www.windowsphone.com/en-au/store/app/office-lens/
- iOS – https://itunes.apple.com/app/office-lens/id975925059
- Android – http://aka.ms/officelensandroid









The challenge

- What is one thing you are going to do as a result of this presentation?

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