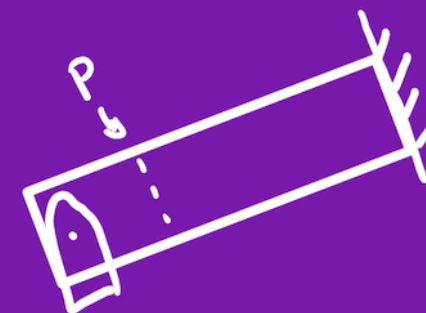
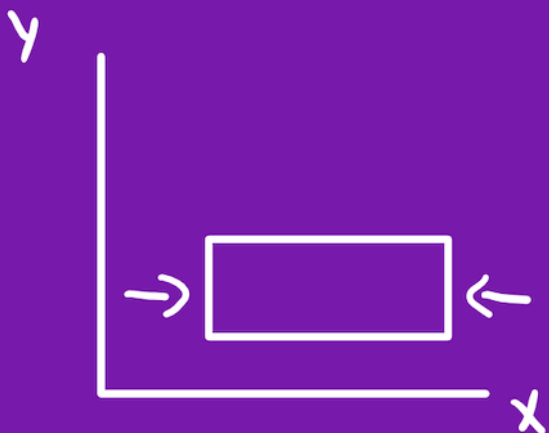


Digital Inking in Teaching

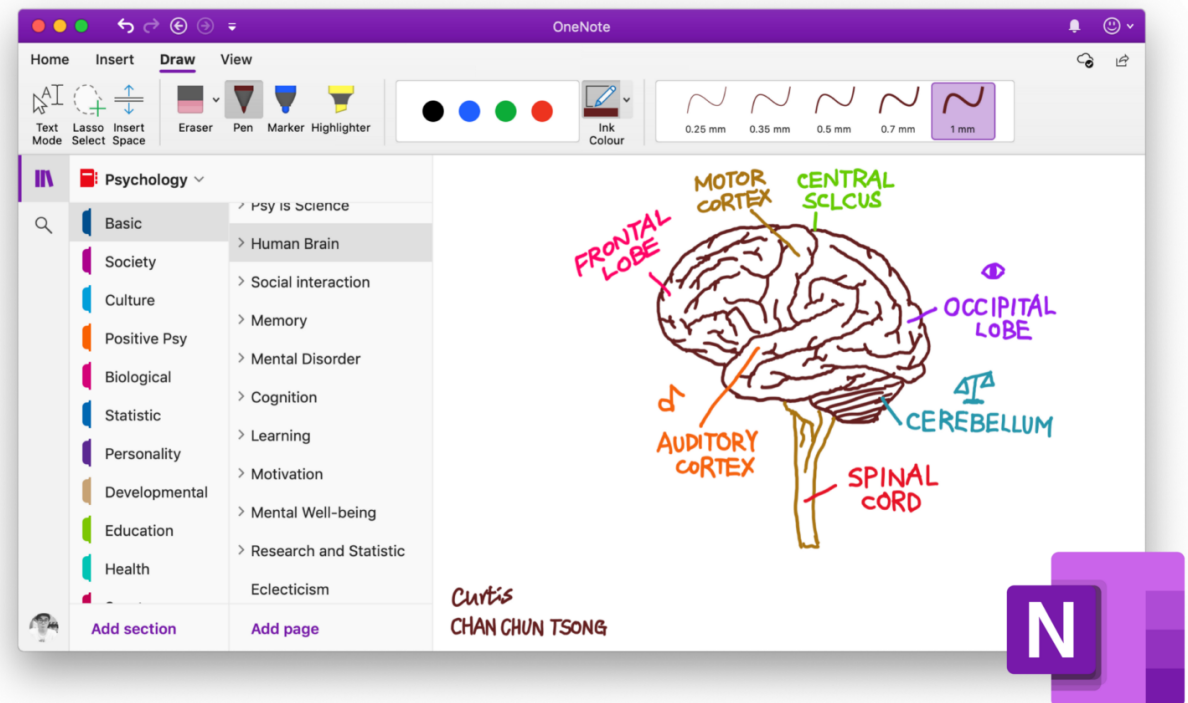
How writing and annotating can facilitate student learning in an online learning environment

Facilitated by Dr. Stine Hansen



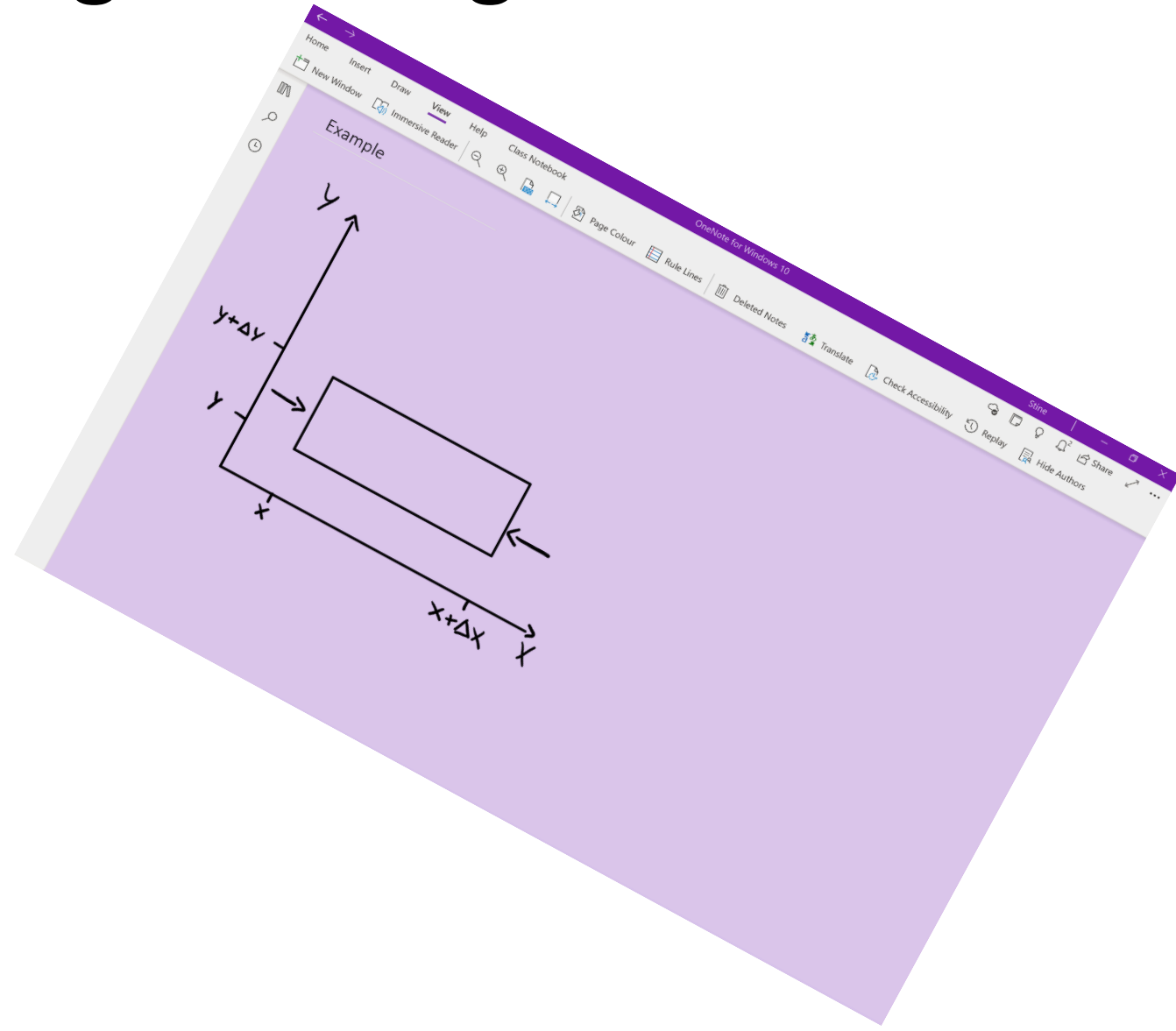
What is digital ink?

- Technology that allows handwriting and drawings to be added electronically to documents.
- Active pen, active stylus,
- Handwritten notes, annotation, and sketching



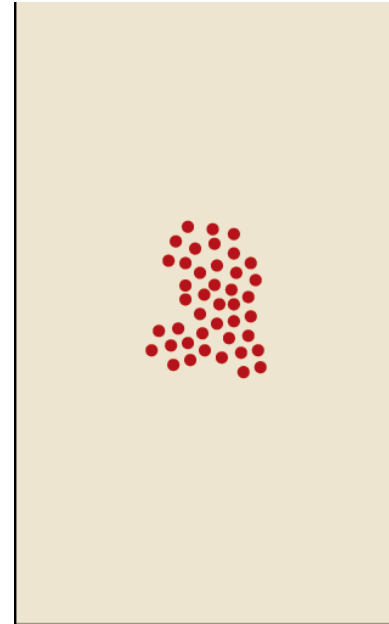
Why use digital inking

- Improves student learning
- Improves student focus
- Shows students your thinking
- Can save time for the instructor
- Online and classroom

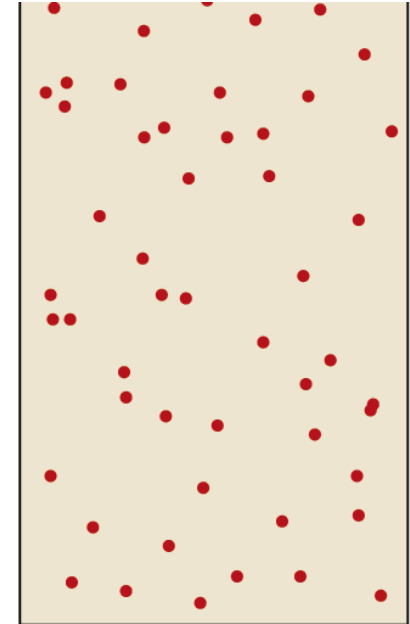


Concentration

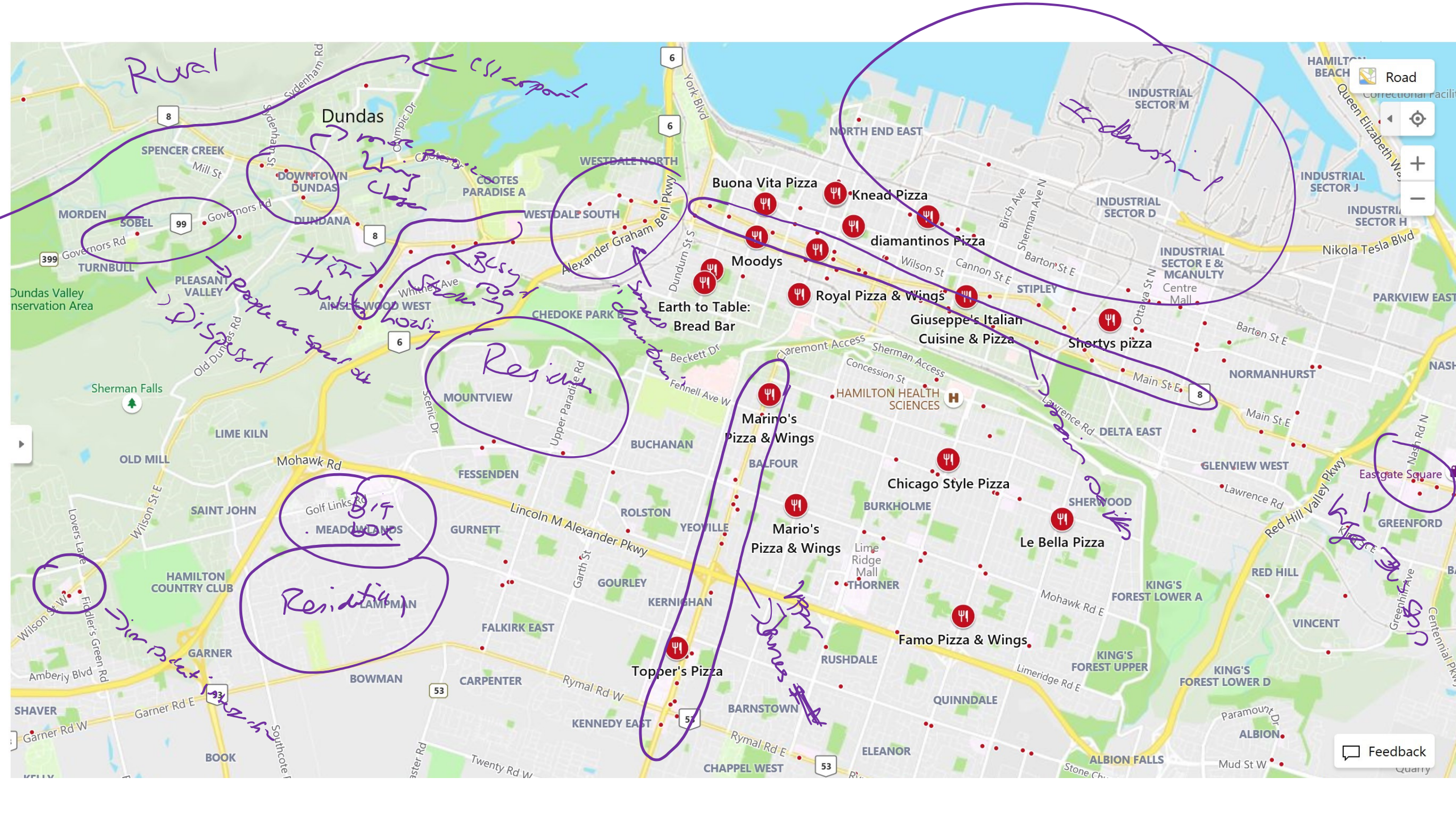
- Definition – *the spread of geographic phenomena over a given area.*
 - *Clustered*
 - *Dispersed*



Clustered



Dispersed



Rural

Resident

Resident

Industrial

People on special diet
Dispersed

Busy

Hillside

Dixie Park

319
MEADOWLANDS

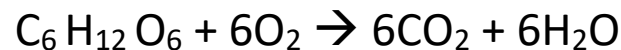
Stoney Creek

Feedback

Top 5 Happiest Countries

Country	Rank
	1
	2
	3
Iceland	4
Norway	5

Glucose, C₆H₁₂O₆, reacts with oxygen to give CO₂ and H₂O. What mass of oxygen (in grams) is required for complete reaction of 25.0 g of glucose? What masses of carbon dioxide and water (in grams) are formed?



H: 1.008 g/mol C: 12.01 g/mol O: 16.00 g/mol

C₆H₁₂O₆ : (6(12.01) + 12(1.008) + 6(16.001) g/mol

(72.06 + 12.096 + 96.00) g/mol

180.16 g/mol

O₂: 32.00 g/mol

CO₂: 44.01 g/mol

H₂O: 18.02 g/mol

$$25.0 \text{ g glucose} \times \frac{1}{180.16} \frac{\text{g}}{\text{mol}} = \frac{25.0}{180.16} \text{ mol glucose} \approx 0.139 \text{ mol glucose}$$

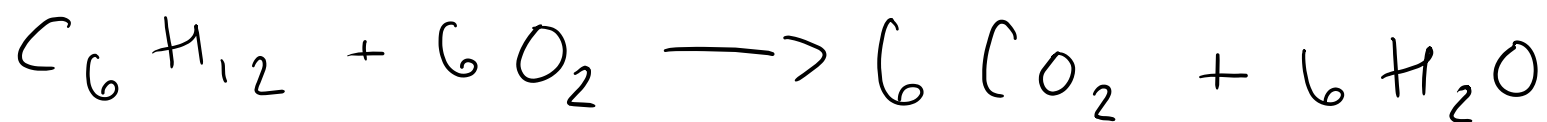
$$0.833 \text{ mol O}_2 \times 32.00 \frac{\text{g}}{\text{mol}} = 26.7 \text{ g O}_2$$

$$0.833 \text{ mol CO}_2 \times 44.01 \frac{\text{g}}{\text{mol}} = 36.7 \text{ g CO}_2$$

$$0.833 \text{ mol H}_2\text{O} \times 18.02 \frac{\text{g}}{\text{mol}} \approx 15.0 \text{ g H}_2\text{O}$$

Glucose, $C_6H_{12}O_6$, reacts with oxygen to give CO_2 and H_2O . What mass of oxygen (in grams) is required for complete reaction of 25.0 g of glucose? What masses of carbon dioxide and water (in grams) are formed?

Glucose, $C_6H_{12}O_6$, reacts with oxygen to give CO_2 and H_2O . What mass of oxygen (in grams) is required for complete reaction of 25.0 g of glucose? What masses of carbon dioxide and water (in grams) are formed?



$$H: 1.008 \frac{g}{mol} \quad C: 12.01 \frac{g}{mol} \quad O: 16.00 \frac{g}{mol}$$

$$C_6H_{12}O_6: (6(12.01) + 12(1.008) + 6(16.00)) \frac{g}{mol}$$

$$(72.06 + 12.096 + 96.00) \frac{g}{mol}$$

$$180.16 \frac{g}{mol}$$

$$25.0 \text{ g glucose} \times \frac{1}{180.16} \frac{mol}{g} = \frac{25.0}{180.16} \text{ mol glucose} \approx 0.139 \text{ mol glucose}$$

$$O_2: 32.00 \frac{g}{mol}$$

$$CO_2: 44.01 \frac{g}{mol}$$

$$H_2O: 18.02 \frac{g}{mol}$$

OneNote

- Unlimited Space
- Wide variety of tools to use for inking
- Easy to add pictures, illustrations, videos, PDF's and other material
- Can be easily distributed to students (if using Teams)

Search for or type a command

UNSW

Activity Chat Teams Assignments Calendar Calls Files

All teams

UNSW

ENGG1300

ENGG1300 2019 T3 - Engineerin...

General

Career navigator

Lab work

Week 01 - Equilibrium and FBDs

Week 02 - Structures and Trusses

Week 03 - Frames and Machines

Week 04 - Shear Force and Bending Moment

Week 05 - Geometric Properties

Week 06 - Particle Kinematics and Kinetics

Week 07 - Particle Energy and Momentum

Week 08 - Rigid Body Kinematics and Kinetics

Week 09 - Rigid Body Energy and Momentum

Week 10 - Revision

Week 11 - Final Exam

1 hidden channel

Apps Help

Week 08 - Rigid Body Kinematic... Posts Files Notes WB To Do WB Slides Quiz B WB Wiki PSSB Solns

OneNote

Week 08 - Rigid Body Kinematics and Kinetics_Notes - Saved

File Home Insert Draw View Help Open in browser

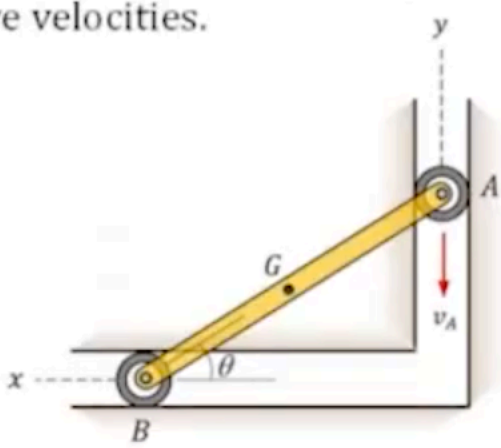
Cambria Math 20 B I U A Ap ...

W8 Example 1

Relative motion

Example 1a: Relative motion

A rigid link \overline{AB} is 225 mm long and has a roller at each end. The rollers are constrained to move in the guides. The end A has a constant velocity of 2.2 m/s in the direction shown. At the instant when $\theta = 35^\circ$, find the angular velocity of \overline{AB} using relative velocities.



David Kellerman HED ... 10:40

10:40

Whiteboard

- Only available on PC
- Limited tools compared to OneNote
- Ability to change page layout, invite people to participate, easy to distribute
- Can use it with any platform, does not require MS Teams

Default Scoring Rubric

No default selected 



Anonymous Marking

Hide student names during assessment

Turnitin available, visibility of student names can not be modified after submissions exist

Annotation Tools

Make annotation tools available for assessment

Save and Close

Save and New

Save

Cancel

Drawing Tablets (no screen)

Wacom Intuos S (USB) \$110 + tax



[Amazon link](#)

XP-Pen \$60-\$110 + tax



[Amazon link](#)

[Amazon link](#)

[Amazon link](#)

Huion \$35-\$200 + tax



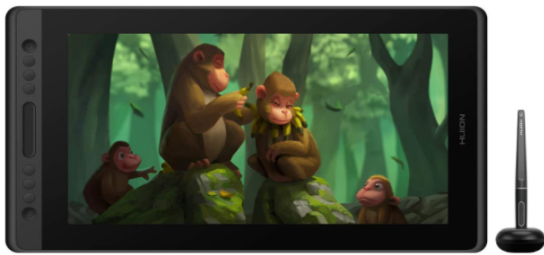
[Amazon Huion Store link](#)

Drawing Tablet Tips & Tricks

- Bigger is better
- Don't hook up any extra monitors
- Hover don't drag to change cursor position on screen
- Practice, practice, practice

Tablets with screens

Pen Displays (drawing tablet with screen) \$350 - \$1,200 + tax



[Huion Store link](#)

[Wacom One link](#)

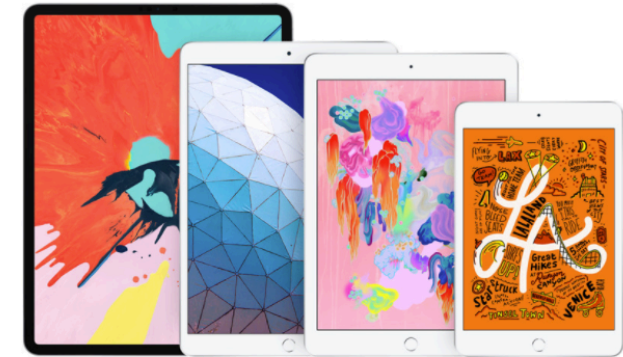
Surface Pro + pen \$799-\$3000 incl. tax



Students, staff, and faculty get education pricing at Microsoft. Contact me for our Microsoft contact if you want to know more.

[Microsoft Store](#)

iPad (iPad, air, iPad Pro) \$429 - \$1,819 + tax



[Apple Canada](#)

Videos to check out

- [Inking your Thinking – the power of the pen – Microsoft Australia](#)
- [MathMathX's Drawing tablet buying guide](#)
- [MathMathX's Intro to Teaching with Drawing tablet](#)
- [Dr. David Kellerman UNSW Australia – using a Surface pro in-class to teach](#)
- [Dr. David Kellerman large scale remote teaching](#) ([Teams example but everything in OneNote could be done with Zoom too](#))
- [Dr. David Kellerman – what comes after Zoom teaching](#)
(PowerPoint, OneNote, Teams – you don't have to use Teams to use OneNote)

Questions?

Email: hanses2@mcmaster.ca