

Accelerated Student Training

Fall-2017

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The **Accelerated Student Training Manual** will help students develop flexible and individualized learning strategies (i.e., daily repetitive self-testing, dictation software, online spaced repetitive flashcard exchange software, and cognitive informatics - computers, tablets, and smart phones). If pre- and post- training are evaluated, these strategies may help faculty evaluate students' problem-solving, long-term retention, critical thinking skills, and academic progress.

SPACED REPETITION SOFTWARE

ANKI

Click on any purple texts to view important information.

PLATFORM:

Anki can be used on Mac and Windows operating systems and a number of mobile apps.

COST:

Free (except for IOS apps i.e., Apple iPhone, iPad, and iPod Touch)

SALIENT FEATURES:

Review anywhere: Anki lets you study on your computer, online, on your cell phone, tablets or other portable devices.

Synchronization features let you keep your information across multiple computers.

Shared decks allow you to divide work between friends and let teachers distribute material to many students simultaneously.

Flexible fact/card model allows you to generate multiple views of information, and input information in the format you select. You're not limited to predefined styles.

Fully extendable, with a large number of plugins/add-ons available.

Optimized for speed, and will handle reviewing decks of 100,000+ cards with no problems.

Clean, user-friendly interface.

Open source.

Spaced repetition learning system.

Charts and statistics about testing and usage are very detailed and accurate.

[Detailed documentation.](#)

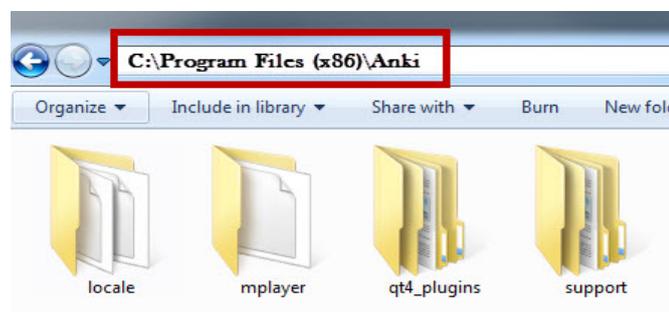
[Ankiweb](#) – Online repository to access your Anki decks.

[Anki Tutorials in YouTube](#)

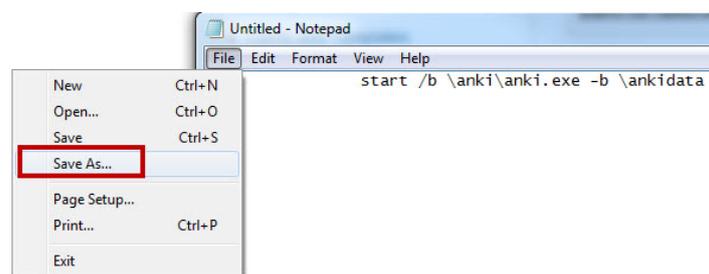
HOW TO INSTALL ANKI IN A FLASH DRIVE

Click on any purple texts to view important information.

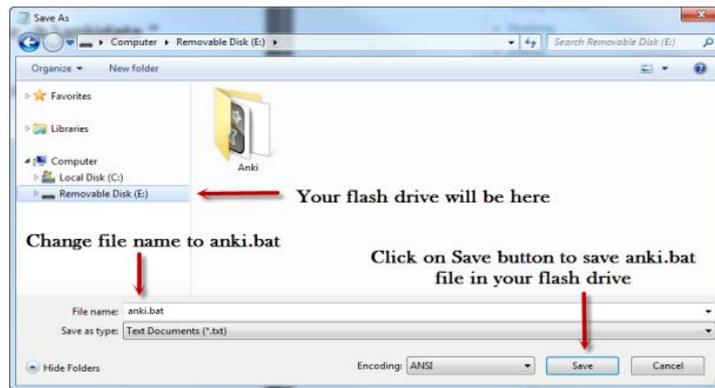
1. Download Anki from www.ankisrs.net and install it in the computer you are using.
2. Plug the flash drive into the USB port in the computer in which you have installed Anki and open the flash drive.
3. Right click on a blank space in the open flash drive, select New and the select Folder. A new folder will be created. Name the folder **Anki**.
4. Open Explorer, copy and paste the following bolded text
C:\Program Files (X86)\Anki in the address bar and press Enter key on the keyboard.



5. Copy all files and folders from **C:\Program Files (X86)\Anki** and paste inside the Anki folder you created in the flash drive.
6. Open Notepad in your computer and paste the following bolded text
start /b \anki\anki.exe -b \ankidata
7. After pasting the text in Notepad, click on *File* at top left corner of Notepad and click on *Save As...*



8. Select your flash drive as the place you want to save this file.
9. In the *File* name position type in the following bolded text **anki.bat**
10. Click on *Save* button in bottom left corner.



11. Anki is now installed in your flash drive. Your flash drive should look like this.



How to open and use Anki from a flash drive on any computer

Note: You can use any computer to open and use Anki from a flash drive

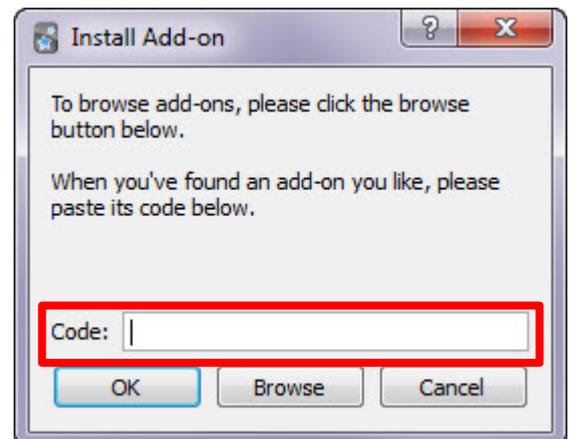
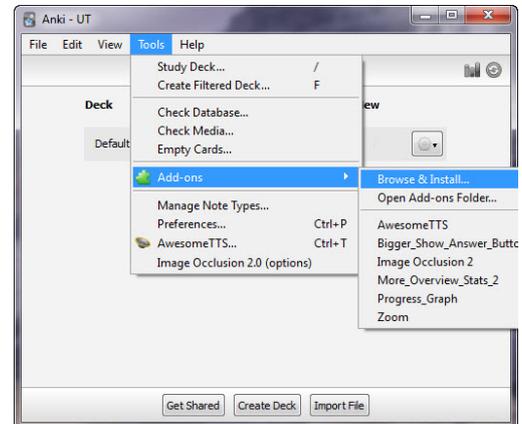
1. Insert flash drive (which has Anki installed in it) into your computer's USB port and open.
2. Double click on the **anki.bat** file. Anki will open and you can start using.

IMAGE OCCLUSION FOR ANKI

Image Occlusion is software that is used to hide labels from diagrams, pictures and images, to automatically create multiple new factual questions in Anki for students' daily spaced repetitive self-testing.

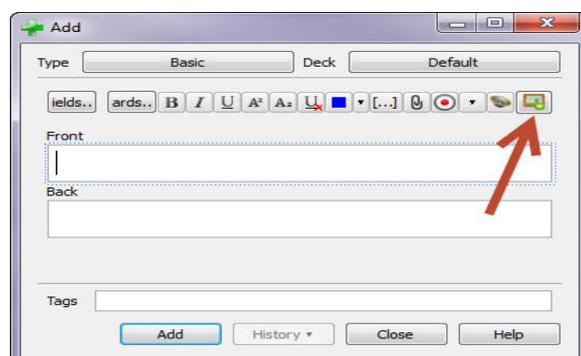
HOW TO INSTALL IMAGE OCCLUSION IN ANKI

1. Install Anki in a computer
2. Open Anki and click **Tools**
3. Select **Add-ons** and click **Browse & Install**
4. Copy and Paste this number **282798835** into the Code box (marked in red) and click **Ok**
5. Software will automatically download and install. Once installation is completed, close and open Anki again.
6. Now Image Occlusion is installed in Anki and ready for use.

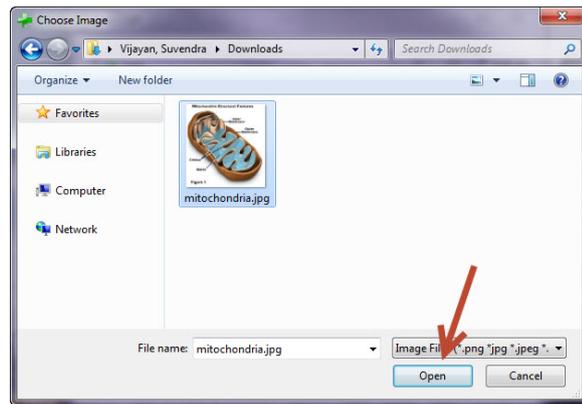


HOW TO USE IMAGE OCCLUSION:

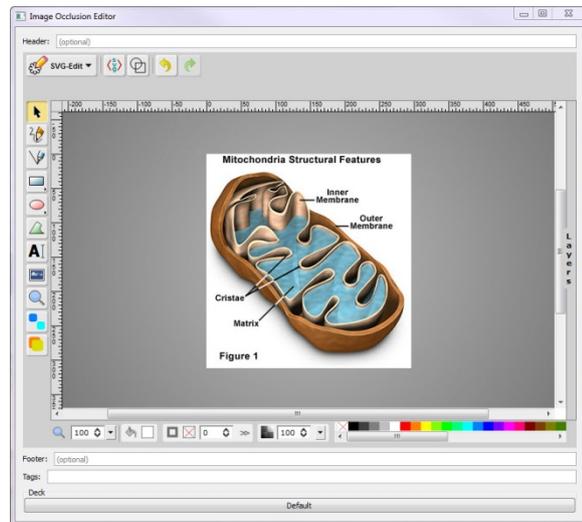
1. Open Anki
2. Click on the deck that you are going to add the image.
3. Click Add button and a new window will appear then click the green button marked by red arrow.



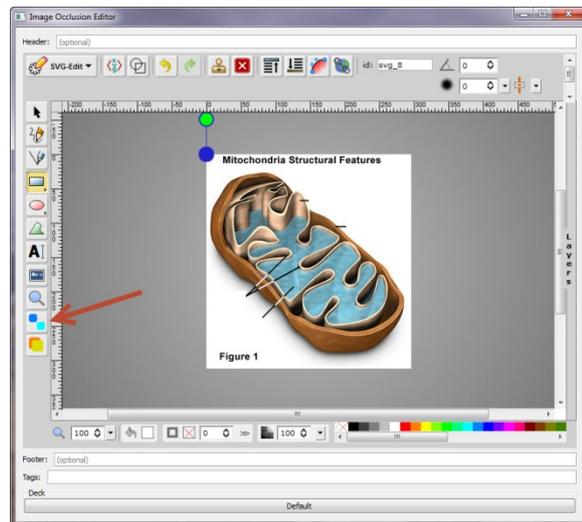
4. A new window will appear. Navigate to the folder where the diagram/image you want to use is present.
5. Select the diagram and click **Open**.



6. A new window will open.

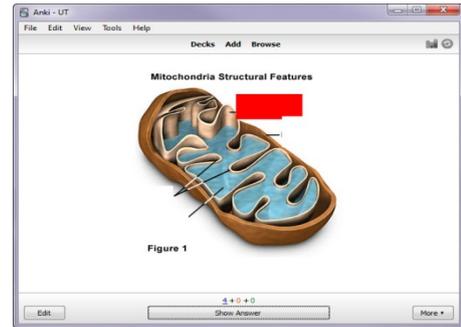


7. Click and drag the cursor over **all the labels** to hide them.
8. Then click on the button with two blue squares marked by the red arrow.

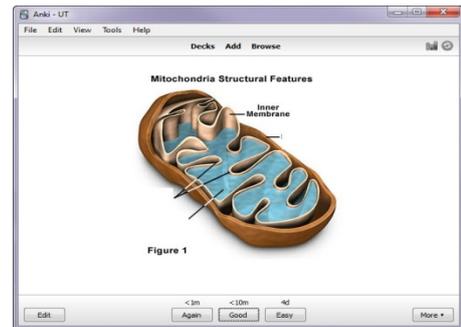


Question

9. The diagram will be added to Anki as factual questions.



Answer



For further information on Image Occlusion and how to use its advanced features click on the links below.

<https://www.youtube.com/watch?v=2xYWIv8ksqg>

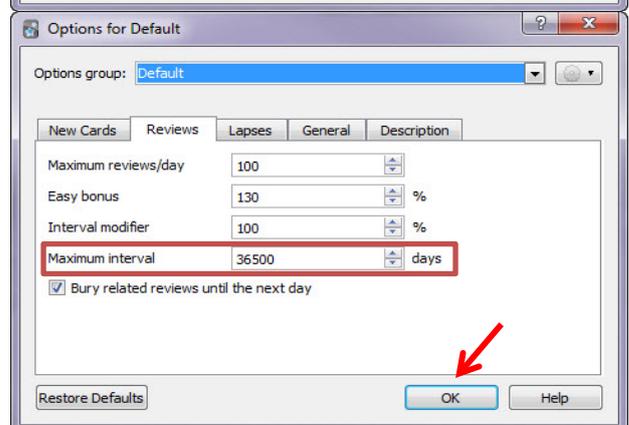
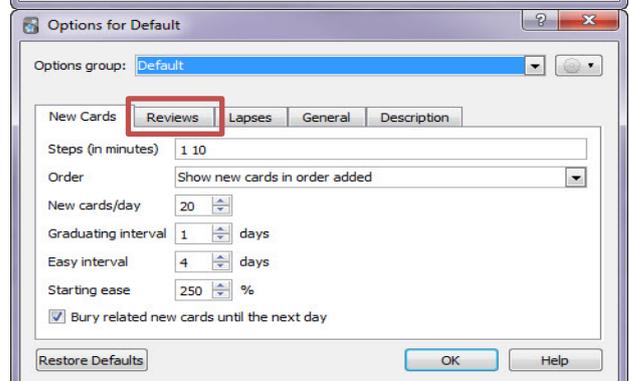
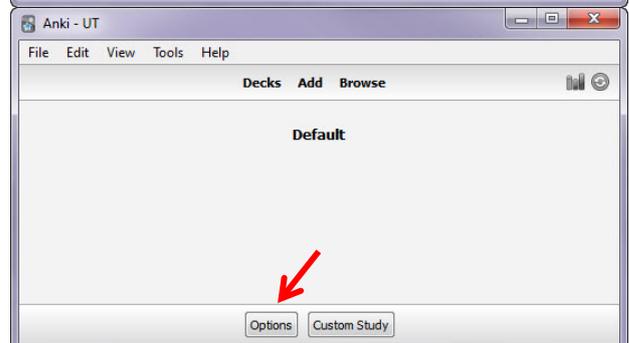
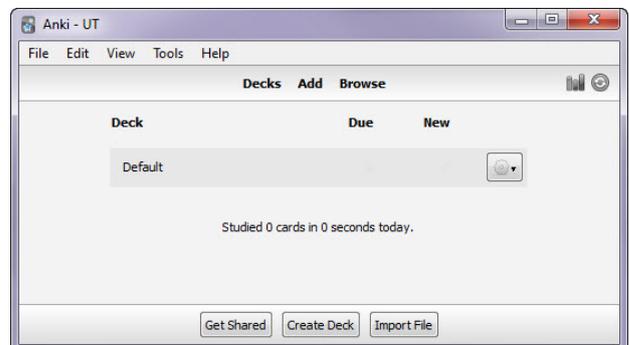
<https://www.youtube.com/watch?v=DAJiVTnuH1c>

HOW TO CHANGE THE MAXIMUM INTERVAL IN ANKI

Click on the above purple text to view important information.

Maximum interval allows you to place an upper limit on the time Anki will wait to reshuffle a card. Decrease the default time to a smaller number for higher retention.

1. Open Anki in computer
2. Click the deck where you want to change the number of days for maximum interval
3. Click on Options
4. This window will open.
5. Click on Reviews to change Maximum interval
6. Change Maximum interval to 30 days (or interval of your selection)
7. Click OK
8. Now the maximum interval for a card is 30 days



HOW TO HAVE REAL TIME COLLABORATION USING GOOGLE DRIVE/GOOGLE DOCS

Using Google Drive/Google Docs students can collaborate with each other in real time. Students can create, edit and share questions and answers simultaneously with all members of the study group.

1. All collaborators will require their **own Google account**
2. Go to **www.drive.google.com**
3. Click on the **New** button and **select Google Docs**
4. A new window will appear with a blank document
5. Click on **Untitled document** in top left corner and **name the document**
6. Click on the **Share** button on top right corner
7. **Enter the email addresses** of persons to share the document
8. Make sure **Can edit** is selected
9. Click on **Done**
10. Now all collaborators can edit the document in real time

RECIPE FOR STUDENT SUCCESS

Recipe for Student Success*

Monday – Friday (weekly retrieval)	Create and retrieve factual and problem-solving Q/A(s) from all sources (create at least one problem-solving Q/A every day).
Saturday AM	Create factual and problem-solving Q/A(s) that could not be completed during the week.
Saturday PM	Continue weekly retrieval and share problem-solving Q/A(s) created during the week with study group.
Sunday AM	Transfer Q/A(s) from licensure, board, and qualifying examinations into same subject areas in Anki for daily repetitive self-testing. If time permits, create factual and problem-solving Q/A(s) that could not be completed during the week.
Sunday PM	During 1 st semester – continue weekly retrieval From 2 nd semester onward - retrieve previous semester(s)/year(s) Q/A(s) after transferring previous semester(s)/year(s) Q/A(s) to new deck(s) called “Semester 1” or “Year 1”.

*All factual and problem-solving Q/A(s) are stored in and retrieved from Anki or similar online spaced repetition software.

*The “Recipe” was created as a flexible guide allowing students to personalize and structure their academic schedules.

DICTATION SOFTWARE

DRAGON NATURALLY SPEAKING 13 FOR PC AND DRAGON DICTATE 4 FOR MAC

Click on any purple texts to view important information.

PLATFORM:

Available for Windows (Dragon NaturallySpeaking 13), and Mac (Dragon Dictate 4)

Cost: Look for periodic sales on Amazon, Best Buy, Frys, etc. as low as \$65

Dragon NaturallySpeaking 13

Student/Teacher edition - Recommended

Home edition and Premium edition - Not Recommended

Dragon Dictate 4

Student/Teacher edition - Recommended

Home edition and Premium edition - Not Recommended

SALIENT FEATURES:

The Dragon software for Mac and PC are speech recognition software for your computer.

You can use it to completely control your computer with **speech input**.

It is very useful in situations where a lot of typing or writing is required, thus enabling effective use of students' time.

It works very well with office applications like MS Office software and Anki.

Instead of writing or typing in a document, you can speak directly into Dragon software, which automatically transcribes the speech and types it on a page as a word document.

There is a learning curve for the software and it will require some time to get use to the user's voice and accent. Students must be patient when trying to master dictation.

Various tutorials are available on how to use this software.

WINDOWS SPEECH RECOGNITION

Click on any purple texts to view important information.

PLATFORM:

Windows

COST:

Free

SALIENT FEATURES:

Use your voice to control your computer.

Speak commands that the computer will respond to, and you can dictate text into the computer.

Control your computer. Speech Recognition listens and responds to your spoken commands. You can use Speech Recognition to run programs and interact with Windows. For more information about the commands you can use with Speech Recognition, see [Common commands in Speech Recognition](#).

Dictate and edit text. You can use Speech Recognition to dictate words into word-processing programs (like MS Office Word) or to fill out online forms in a web browser. You can also use Speech Recognition to edit text on your computer. For more information about dictating text, see [Dictate text using Speech Recognition](#).

MAC DICTATION

Click on any purple texts to view important information.

PLATFORM:

Mac OS X

COST:

Free

SALIENT FEATURES:

With Dictation, you can use your voice instead of typing text. No setup or special training is required.

Use Dictation in an application.

Use Enhanced Dictation with Mavericks.

Dictation requires an internet connection with Mountain Lion.

[Detailed list of Dictation commands](#)

NOTE TAKING TOOLS

EVERNOTE

[Click on the above purple text to view important information.](#)

PLATFORM:

Evernote works with Windows OS, MAC OS, IOS, Android, and Windows Phone.

COST:

Free and paid versions. Paid version is \$5 a month or \$45 per year.

SALIENT FEATURES:

Service for note-taking and archiving.

Notes can be text, webpage, handwritten notes, pictures, and voice memos.

Notes can be sorted, tagged, edited, given comments, searched, and exported.

Free and premium versions available.

Currently free version has a limit of 60MB/month online storage.

Premium version will cost \$5/month or \$45 per year with online storage of 1000MB/month.

Users can sync their notes with a master copy in Evernote servers. The amount of storage will depend on whether it is a free or premium version.

This approach can help the user keep up to date with their notes even if edited from various locations or devices.

Evernote can be accessed via web browser also.

The premium version is ad free, has faster word recognition, text searching in PDF and has a greater type of file format support.

The maximum limit is 100,000 notes and 250 notes.

MICROSOFT® ONENOTE

Click on the above purple text to view important information.



PLATFORM:

Microsoft OneNote can be used on Windows, Windows Phone, iOS, Mac OSX, Android, and online using a web browser.

COST:

Free

SALIENT FEATURES:

It is a free form information gathering and multi user collaboration tool.

It can be used to gather notes, audio, video, and pictures into a virtual note book.

OneNote is arranged into pages which are organized into notebooks.

OneNote has tabbed ring binder structure.

Smartpen can connect to OneNote via internet.

It is integrated with Office Web Apps for online access.

ECHO SMARTPEN

Click on any purple texts to view important information..

PLATFORM:

Echo Smartpen can be used on Mac and Windows operating systems.

Cost:

Echo Smartpen 2GB - \$119.95

Echo Smartpen 2GB with Wifi - \$149.95

SALIENT FEATURES:

Record all you hear, say and write using Echo smartpen.

Replay audio using the Livescribe paper, computer or a mobile device.

Easily send your notes and audio as pencast to Evernote, Facebook MyLivescribe. Mobile devices, or computer using Livescribe Connect software.

The smartpen has a micro USB connector to transfer notes and audio to your computer. The micro USB port can be used to charge the smartpen.

A standard 3mm jack is available for audio.

Microphone is available for voice recording.

High contrast OLED display is present for easy navigation.

2GB, 4GB and 8GB models are available.

Soft rubber grip for comfort writing is available.

Replaceable ink tips are available.

EDUCATIONAL APPS

BIODIGITAL HUMAN

Click on any purple texts to view important information.

The BioDigital Human™ is a 3D platform that simplifies the understanding of anatomy, disease and, treatments. Interactive tools for exploring, dissecting, and sharing custom views, combined with detailed medical descriptions provide an unprecedented new visual format to learn about your body.

PLATFORM:

BioDigital Human is web based. It is available across all operating systems. Support browsers include latest versions of Internet Explorer, Google Chrome, Mozilla Firefox, and Apple Safari.

COST:

Free

Individual - \$4/month (billed annually)

SALIENT FEATURES:

The Human platform is built using one of the newest Web standards called WebGL. It is a Cloud-based platform.

Over 5,000 male and female anatomy objects, created with the help of expert scientists and physicians.

View dynamic animations of health conditions and disease progression, and understand spatial relationships.

Can create custom virtual body: save edited views, and write notes and personalized labels for future reference.

Test using the quiz engine, and compare scores with peers.

Virtually dissect the body to isolate certain areas, and produce custom cross-sections.

AST TUTORIALS

CREATING FACTUAL QUESTIONS

To create factual questions, the student must learn to use one step linear/direct answers, new words, keywords, facts, definitions, rules, numbers, symbols, formulas, pictures, diagrams or main points of a paragraph.

Example:

What are the measurements to gauge how well treatment is working for a patient diagnosed with diabetes? Ans: Diet, weight control, exercise, monitoring with A1C and eAG tests

A patient is injured in an automobile accident and must have his pancreas surgically removed. What is the appropriate therapy for managing his blood glucose? Ans: Insulin therapy

A patient is injured in an automobile accident and must have his pancreas surgically removed. Name a hormone that could be affected. Ans: Insulin

What are the tests to provide an overall picture of how well a patient is managing their diabetes? Ans: A1C and eAG

When a patient has much less insulin than their body needs, what is the potentially fatal complication? Ans: Diabetic ketoacidosis

When highlighting-highlight only the question (not the answer)

Diabetes is a syndrome characterized by a disorder of metabolism and inappropriate high blood sugar (*hyperglycemia*) resulting from either low levels of the hormone **insulin** or abnormal resistance to insulin **coupled with inadequate levels of secretion** to compensate. Characteristic symptoms are excessive urine production (*polyuria*), excessive thirst and increased fluid intake (*polydipsia*), and blurred vision. These symptoms are usually absent if the blood sugar is only mildly elevated. **Insulin** is produced by the **pancreas**, a large gland behind the stomach. Patients with diabetes build up **glucose** in the blood which overflows into the **urine**, and passes out of the body in the urine. Thus, the body loses its main source of fuel even though the blood contains large amounts of glucose.

A1C is a lab test that shows the average level of blood sugar (glucose) over the previous 3 months. It shows how well you are controlling your diabetes.

CREATING PROBLEM SOLVING QUESTIONS

Introduction:

Learning to create problem-solving questions as part of daily spaced repetitive self-testing (*Accelerated Student Training*) may help students improve their long-term retention, critical thinking and problem solving skills.

Definition:

Problem-solving questions are used to help students conduct daily spaced repetitive self-testing by obtaining and linking characteristics, symptoms, properties and/or procedures to achieve the solution(s), answer(s), or outcome of the question.

- a. Template
- b. Practice
- c. Examples
- d. Summary

Template:

To create a problem-solving question, the student must first develop a question or problem with a thorough description linking the **characteristics, symptoms, properties, and/or procedure selections** (e.g., text, graphics, visual, auditory, haptic, sensory, animation, video, simulation, etc.).

The next step is to **construct solutions, including correct and incorrect answer(s), from which possible choice(s) are made** for the right answer.

This template or format fits a broad set of problem-solving questions and is not intended to cover all possible problem-solving questions.

Practice:

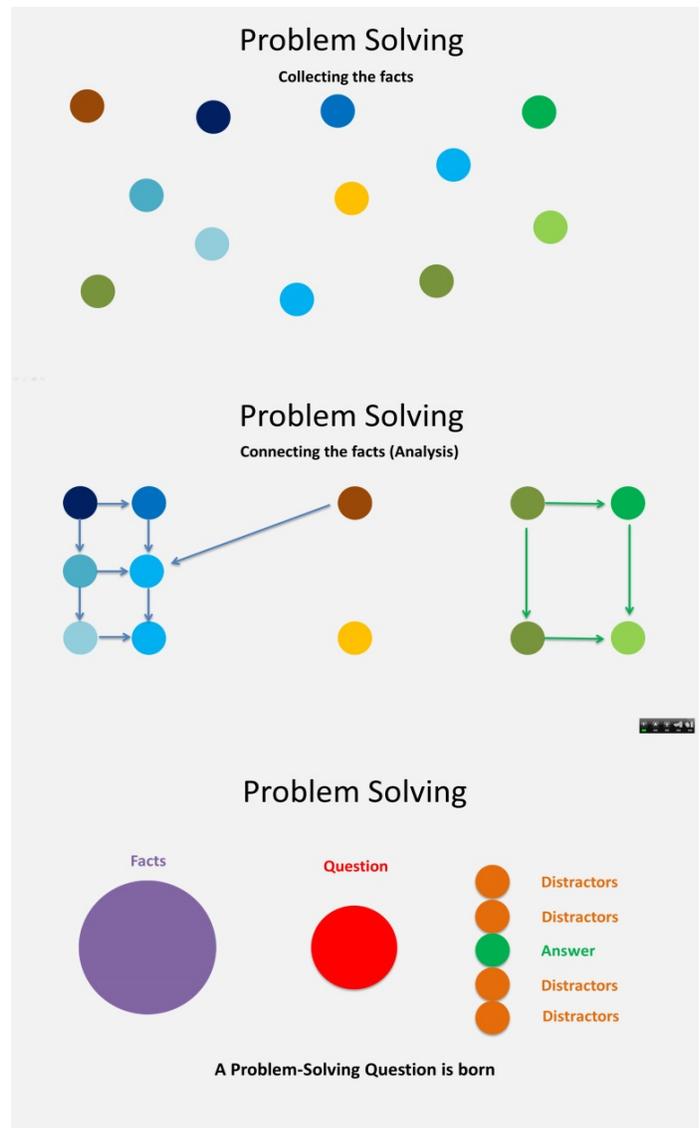
The 5Cs

1. **Collect** the (located in question stem and previously covered in class) facts.
2. **Connect** the facts (analysis; categorize, link, sort, group).
3. **Construct** question from connected facts.
4. **Conclude** solution/answer from connected facts.
5. **Create** plausible distractors related to question.

1. **Collect** the (located in question stem and previously covered in class) facts.

2. **Connect** the (located in question stem and previously covered in class) facts (analysis; categorize, link, sort, group).

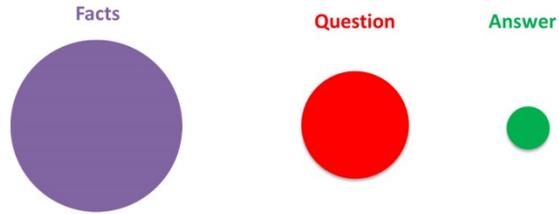
3. **Construct** question from connected facts.
4. **Conclude** solution/answer from connected facts.
5. **Create** plausible distractors related to question.



Three Types of Problem-Solving Questions (not exhaustive)

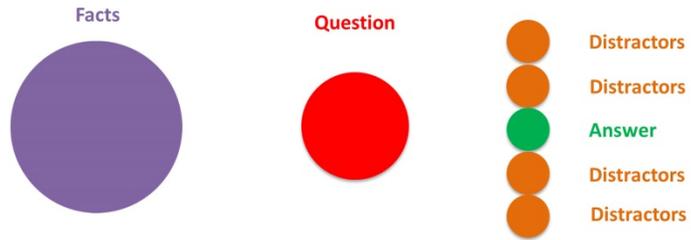
**Problem-Solving Question – Type 1
No Distractors**

Type 1 – No
Distractors



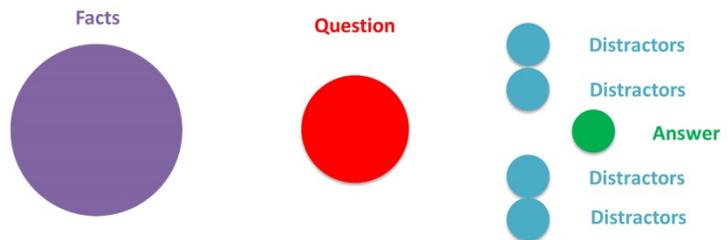
**Problem-Solving Question – Type 2
Negative Distractors**

Type 2 – Negative
Distractors



**Problem-Solving Question – Type 3
Positive Distractors**

Type 3 – Positive
Distractors

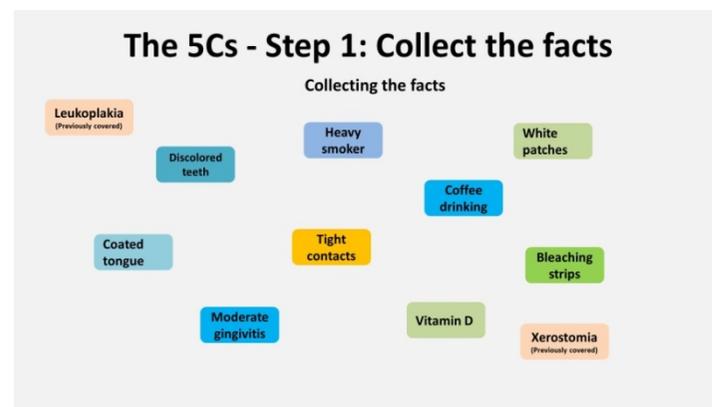


The 5Cs - Step 1: Collect the facts

Collect the **(located in question stem and previously covered in class)** facts, topics, and elements.

For instance, previously covered topics from the academic week included:

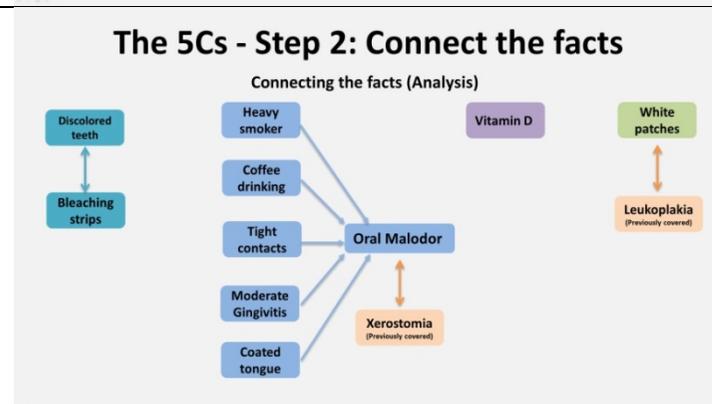
- Dental bleaching theories and techniques
- Oral malodor
- Leukoplakia
- Oral cancer diagnostics
- Tobacco cessation



The 5Cs - Step 2: Connect the facts

Connect the **(located in question stem and previously covered in class)** facts (Analysis)

- Categorize
- Link
- Sort
- Group, etc.



The 5Cs - Step 3: Construct Question

The student pulls together a description of a case, problem or narrative from covered facts (previously covered from academic week.), topics, and elements to present in question stem.

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

If Mrs. Smith complains of sensitive teeth, what could be the most probable cause?

The 5Cs - Step 4: Conclude Solution**Question:**

If Mrs. Smith complains of sensitive teeth, what could be the most probable cause?

Answer:

Bleaching strips

Completed Problem Solving Question (Type 1)

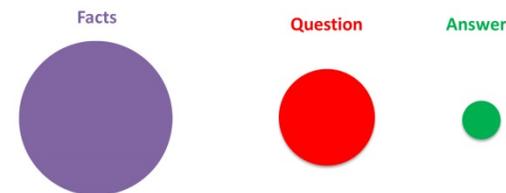
Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

If Mrs. Smith complains of sensitive teeth, what could be the most probable cause?

Answer:

Bleaching strips

**Problem-Solving Question – Type 1
No Distractors**

The 5Cs - Step 3: Construct Problem Solving Question (Type 2)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

The white patches and coated tongue may be the result of what?

The 5Cs - Step 4: Conclude Solution Problem Solving Question (Type 2)**Question:**

The white patches and coated tongue may be the result of what?

Answer:

Xerostomia

The 5Cs - Step 5: Create Distractors Problem Solving Question (Type 2)

Plausible and Related negative distractors

Distractor 1: Excellent oral hygiene

Distractor 2: Bleaching strips

Distractor 3: Vitamin D intake

Completed Problem Solving Question (Type 2)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

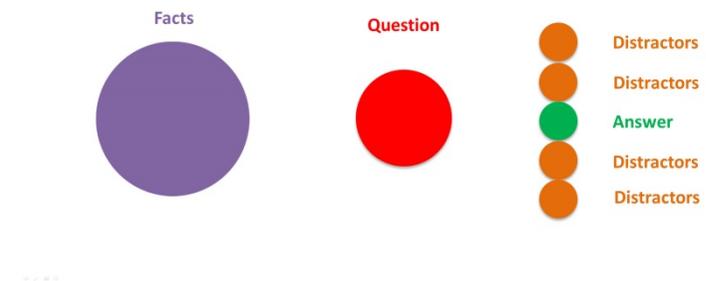
The white patches and coated tongue may be the result of what?

Answer:

1. Excellent oral hygiene
2. Bleaching strips
3. Vitamin D intake

4. Xerostomia

Problem-Solving Question – Type 2 Negative Distractors



The 5Cs - Step 3: Construct Problem Solving Question (Type 2)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor and dry mouth.

Question:

What is the diagnosis if the white patches **are not** easily removed with gauze?

The 5Cs - Step 4: Conclude Solution Problem Solving Question (Type 2)

Question:

What is the diagnosis if the white patches **are not** easily removed with gauze?

Answer:

Leukoplakia

The 5Cs - Step 5: Create Distractors Problem Solving Question (Type 2)

Plausible and Related negative distractors

Distractor 1: Excellent oral hygiene

Distractor 2: Bleaching strips

Distractor 3: Vitamin D intake

Completed Problem Solving Question (Type 2)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor and dry mouth.

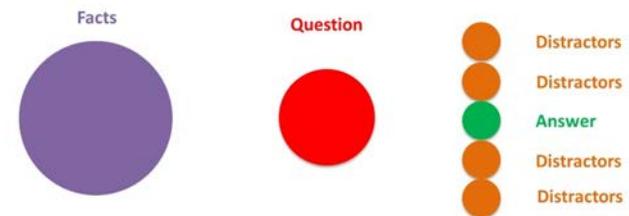
Question:

What is the diagnosis if the white patches **are not** easily removed with gauze?

Answer:

1. Excellent oral hygiene
 2. Bleaching strips
 3. Vitamin D intake
 4. **Leukoplakia**
-

Problem-Solving Question – Type 2 Negative Distractors



The 5Cs - Step 3: Construct Problem Solving Question (Type 3)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

All of the following could be contributing factors to Mrs. Smith's malodor EXCEPT?

The 5Cs - Step 4: Conclude Solution Problem Solving Question (Type 3)

Question:

All of the following could be contributing factors to Mrs. Smith's malodor except which one?

Answer:

Vitamin D intake

The 5Cs - Step 5: Create Distractors Problem Solving Question (Type 3)

Plausible and Related positive distractors

Distractor 1: Xerostomia

Distractor 2: Coated tongue

Distractor 3: Tobacco use

Distractor 4: Poor oral hygiene

Completed Problem Solving Question (Type 3)

Mrs. Smith, a heavy smoker and coffee drinker recently began using bleaching strips. Examination reveals her oral mucosa has soft white patches easily removed with gauze. Her tongue is coated. She has moderate gingivitis with no bone loss and very tight contacts that impede flossing. She takes Vitamin D supplements daily. She is concerned about oral malodor.

Question:

All of the following could be contributing factors to Mrs. Smith's malodor EXCEPT?

Answer:

1. Xerostomia

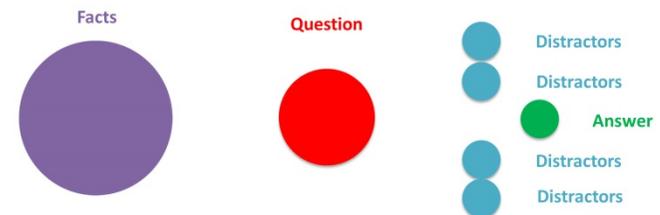
2. Coated tongue

3. **Vitamin D intake**

4. Tobacco use

5. Poor oral hygiene

Problem-Solving Question – Type 3 Positive Distractors



Summary:

To determine the benefits, the student should be tested pre- and post- training for changes in daily repetitive self-testing, problem solving, critical thinking, and long term retention skills.

PROBLEM SOLVING Q/A CATEGORIES

1. Definition/term question

A problem-solving question and answer containing a specific definition or term would fall under the category of definition/term.

2. Interactive question

Any problem-solving question and answer that does not have a picture, formula or definition/term in its question or answer would qualify as an interactive question.

3. Formula

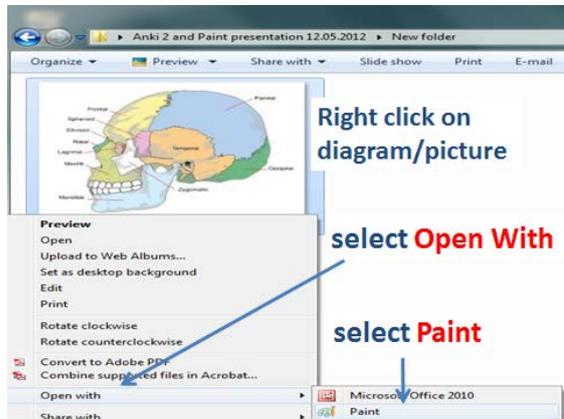
Any problem- solving question and answer that contains a formula in the question or answer and/or requires making a calculation and responding with or without a numeric answer qualifies as a formula question.

4. Picture question

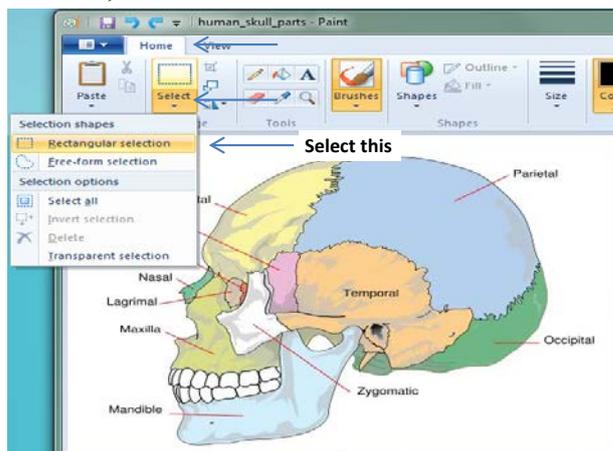
Any problem-solving question and answer that contains a picture or diagram can qualify as a picture question.

USING MS PAINT TO REMOVE LABELS FROM PICTURES

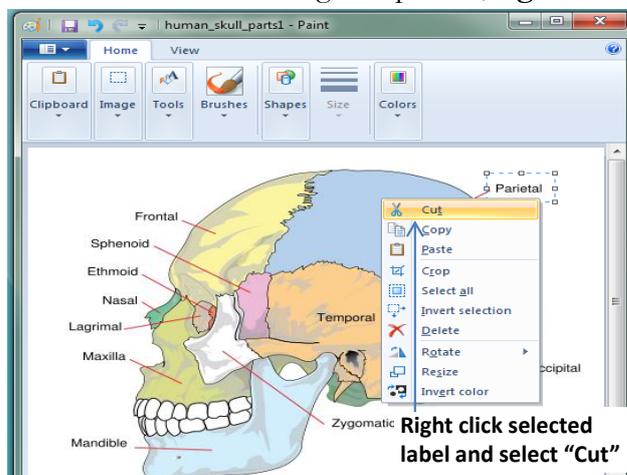
Right click on diagram/picture, select **Open With** and select **Paint**



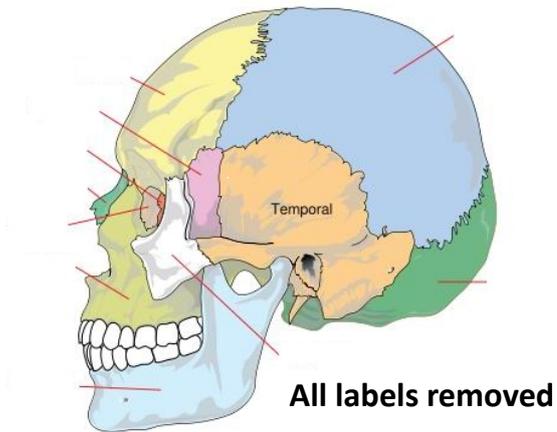
In Paint, select **Home** tab and then select the **rectangular selection**



Select the label in the diagram/picture, **right click** and select **Cut**

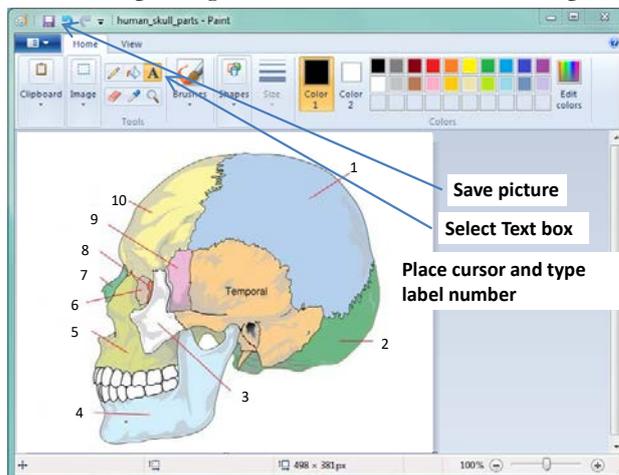


The label will be removed from the diagram



Do this for all labels

After completing, click on **Save As** and save picture as **Jpeg**



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IMPLEMENTATION OF AST IN CLASSROOM

Train students to create problem solving questions.

Include problem solving question creation as part of regular assignments.

Students must also submit their problem solving questions in a blog. Faculty and students can comment. Participation must be encouraged.

Faculty can showcase innovative questions in classroom for an interactive session with students.

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