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Fostering Active Learning in the Large and Small Classrooms: Creative Teaching Techniques

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 Massachusetts College of Pharmacy and Health Sciences
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Introduction

- Jennifer Goldman-Levine, Pharm.D., CDE, BC-ADM
 - Associate Professor of Pharmacy Practice
 - Massachusetts College of Pharmacy and Health Sciences
 - Pharmacist for 20 years, Professor for 13 years
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 - jennifer.goldman-levine@mcpsh.edu
- Kate MacDonald, MAT, MEd
 - Associate Professor of Learning Resources
 - Director of Instructional Design Services
 - Specialist in Online Learning Program Design and Facilitation
 - Massachusetts College of Pharmacy and Health Sciences
 - Educator for 37 years, professor for 13 years
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Cough, Cold, Flu

ABCs

Goals and Objectives

The primary goal of this session is to discuss the implementation and development of strategies to enhance active learning in the large and small classroom settings

1. To learn about techniques used in small and large classroom settings in order to be able to transform content laden, lecture-based courses into student-centered, active learning experiences.
2. To identify specific small and large classroom course-related problems/deficiencies and apply appropriate techniques to improve student outcomes.
3. To demonstrate and share with each other creative teaching techniques in the small and large classroom settings that capture student's attention, enhance student participation, foster active learning through reflection and analysis of content, and incorporate interactive review for improved retention of information.
4. Determine at least one or two techniques to apply in their own classrooms immediately, through active practice of selected, proven techniques in the session.





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Why?

ABCs


Group Benefits/Why Use Groups?

- What are the benefits of breaking students into groups? **Group discussion**







* "People don't argue with their own data."
 * Source: Piles, R. W. Creative Teaching Techniques Handbook, second edition, Lakewood Books, Minneapolis, MN, 1994, p. 3-4.

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Picking Group Leaders

Pointing	Alphabet
Number of letters in a name	Colors/Clothes
Rising time in AM	Bedtime
Sibling number	Watch face size
Who drove furthest	Volunteer to pick leader
Last leader pick new	Birthday closest to today








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Openers




- Effective openers need to...
 - Break preoccupation
 - Facilitate networking
 - Be relevant to the content
 - Have an element of curiosity
 - Maintain or enhance self-esteem
 - Be fun for instructor and students
- Good openers can also be good closers

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Openers – Examples

Primacy/Recency

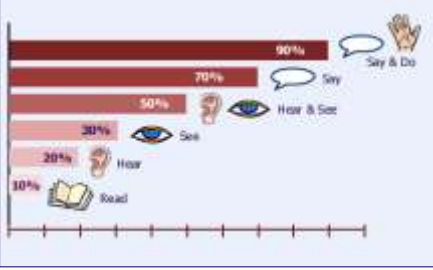
Welcome mat	Alphabet review
Greet people as they come in	Sealed envelopes
Name tags	Magic tricks
Music	Start with a story
Poster	Make a promise
Bingo to meet others	Make a profound statement
Hangman/word teasers	Use a visual aid or prop
Name 3 things – 1 is a lie	Sentence completion
Partner posters	Agree/Disagree statements

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Involvement = Retention





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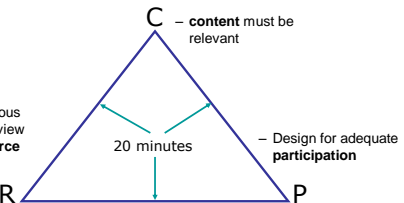
Source: Pike, R. W. Creative Teaching Techniques Handbook, second edition, Lakeshore Books, Minneapolis, MN, 1994, p. 77.

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CPR

- Content/Participation/Review
- Chunking = 20-min. "chunks"
- Allow for attention span & retention



C – content must be relevant

P – Design for adequate participation

20 minutes


– create various ways to review and reinforce key points

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Source: Pike, Robert. Creative Training Techniques Handbook, second edition, p. 79, 1994.

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Need to Know/Nice to Know/ ? Where to Go



- Organize content
 - “Mindmap” is a good device
- Categorize
 - What they MUST know *Content is focused here*
 - For immediate recall and application
 - What is helpful to know
 - Diagrams, lists, cases, examples, procedural steps
 - How to find resources for more info
 - Articles, books, Web sites, computer programs

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Mind-Mapping

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Mind Map Examples

Source: <http://www.handmade.com/screens/mindmap.jpg>

Mind Map Examples

Source: <http://www.handmade.com/screens/mindmap.jpg>

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Reviews/Closers

- Effective reviews need to...
 - Involve student participation
 - Vary the activity
 - Happen frequently
- Effective closers need to...
 - Tie things together
 - Allow action planning (follow-up?)
 - Allow for celebration

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Closers/Reviews

- Many can be used during class for “chunks” or at the end
- Successful examples
 - Word search
 - Ball toss
 - Envelopes
 - Index Cards

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Word Search


- Group: the person with the most number of non-human legs at home
- Word Search (what is it? directions coming)

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Lectures Plus+

- Foundational teaching method
- Promotes learning if well designed
- Ineffective for many
 - Visual learners
 - Kinesthetic learners
- Keep your lectures, but adapt and enhance them





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Multiple Techniques...

- Brainstorming (3x5 cards)
- Cases
- Chalkboard, whiteboard
- Compare/contrast
- Debate
- Demonstration
- Discussion
- Films/video
- Games, puzzles
- Incomplete handouts
- Interview
- Listening assignments
- Maps, models (props)
- Mind mapping/concept mapping
- Music
- Newspaper articles
- Panels
- Problems solving
- Reflection/review (3x5 cards)
- Storytelling
- Testimonials
- Visuals: images, diagrams, charts
- Windowpanes





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Procedural Steps/List

- Steps in the Heimlich Maneuver
 1. Observe subject in distress
 2. Ask if them if they are choking
 3. Tell them you will help
 4. Walk around behind them
 5. Make a thumb-less fist
 6. Place your thumb-less fist about half way between their throat and waist
 7. Place your other hand on top of your thumb-less fist
 8. Pull upward hard three times
 9. Check to see if they are okay



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Window Pane Example

The Heimlich Maneuver 22

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Window Pane Example

The Heimlich Maneuver 23

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What do you do?

- Do you use a successful student-centered activity?
- Create one new activity to use in your course or class
 - Something new or
 - Something you learned today

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Enjoy Teaching and Learning!

- Try something new
 - One or two techniques
 - Suitable to your style, comfort level
- Exchange ideas that work with other faculty



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Contact Us!

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 Jennifer Goldman-Levine, Pharm.D., CDE, BC-ADM • Kate MacDonald, MAT, MSEd





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The following resources are available from bookstores or libraries:

- Smith, K. et al. "Pedagogies of Engagement: Classroom-Based Practices," *Journal of Engineering Education*, Jan. 2005, p. 87-98.
- Barkley, E. et al. *Collaborative Learning Techniques: A Handbook for College Faculty*, Jossey-Bass, San Francisco, 2005.
- *Active Learning: Creating Excitement in the Classroom*, by Charles C. Bonwell and James A. Eison, 1991.
- *Bringing Problem-Based Learning to Higher Education: Theory and Practice*, LuAnn Wilkerson, Wim H. Gijsselaers, Editors, 1996.
- *Cooperative Learning: Increasing College Faculty Instructional Productivity*, by David W. Johnson, Roger T. Johnson, Karl A. Smith, 1991.
- *Teaching and Performing: Ideas for Energizing your Classes*, by William M. Timpson, 1997.
- *Interactive Lectures: Add Participation to Your Presentation*, by Sivasailam Thiagarajan with Raja Thiagarajan, 1995.
- Thiagi, S. *Thiagi's 100 Favorite Games*, John Wiley & Sons, 2006

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The following resources are available from bookstores or libraries:

- *Learner-Centered Teaching: Five Key Changes to Practice*, by Mary Ellen Weimer, 2002.
- *Promoting Active Learning: Structures for the College Classroom*, by Chet Myers, Thomas B. Jones, 1993.
- Gedalof, A. *Teaching Large Classes*, Society for Teaching and Learning in Higher Education, 1998.
- *Teaching and Performing: Ideas for Energizing your Classes*, by William M. Timpson, 1997.
- Stanley, C. & Porter, M. *Engaging Large Classes: Strategies and Techniques for College Faculty*, Anker Publishing Co., Inc., 2002.
- Anderson, L. & Krathwohl, D. *A Taxonomy for Learning, Teaching, and Assessing*, Addison Wesley Longman, Inc., 2001.
- Fink, L. D. *Creating Significant Learning Experiences*. Jossey-Bass, 2003.
- *Using Cases to Improve College Teaching: A Guide to More Reflective Practice*, by Pat Hutchings, 1993.
- *The Wired Professor: A Guide to Incorporating the World Wide Web in College Instruction*, Anne B. Keating, Joseph Hargitai, 1999.

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The following resources are available through the product catalog of The Bob Pike Group (http://www.bobpikegroup.com/store_list.asp)

- *Creative Training Techniques Handbook: Tips, Tactics, and How-To's for Delivering Effective Training*, by Bob Pike, 2nd Ed., Lakewood Books, Minneapolis, MN, 1994.
- *Dynamic Openers & Energizers: 101 Tips and Tactics For Enlivening Your Training Classroom*, by Bob Pike with Sara Anderson, 1994.
- *Powerful Audiovisual Techniques: 101 Ideas to Increase the Impact and Effectiveness of Your Training*, by Bob Pike with Julia Tilka, 1994.
- *Mindmapping: Your Personal Guide to Exploring Creativity and Problem-Solving*, by Joyce Wycoff, 1991.
- *High Impact Presentations*, by Bob Pike, 1995.
- *Dealing with Difficult Participants: 127 Practical Strategies for Minimizing Resistance and Maximizing Results in Your Presentations*, by Bob Pike and Dave Arch, 1997.

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The following resources are available through the product catalog of The Bob Pike Group (http://www.bobpikegroup.com/store_list.asp)

- *First Impressions, Lasting Impressions: Openings and Closings You Can Count On!*, by Dave Arch, 1993.
- *Flip Chart Magic: Energizing Ideas for Novice and Expert*, by Dave Arch and Ivar Torgrimson, 1999.
- *All New Tricks for Trainers: 57 Tricks & Techniques to Grab and Hold the Attention of Any Audience...and Get Magical Results!*, by Dave Arch, 1998.
- *Red Hot Handouts: Taking the HO HUM Out of Handouts*, by Dave Arch, 1996.
- *50 Creative Training Closers: Innovative Ways to End Your Training with IMPACT!*, edited by Lynn Solem and Bob Pike, 1997.
- *Wuzzles for Presenters: Stretching Exercises For the Mind*, by Tim Underwood, 1994.
- . . . and other tools and props.

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The following Web sites are good resources for innovation in teaching:

- International Alliance of Teacher Scholars (<http://www.iats.com/>)
- Site for various innovative teaching resources created by renowned instructional designer *Thiagi* (Sivasailam Thiagarajan) (<http://www.thiagi.com/>)
- Classroom Assessment Techniques
<http://www.ntlf.com/html/lib/bib/assess.htm>
- Applying Classroom Assessment Techniques
<http://www.bcit.ca/files/idc/pdf/htclassassess.pdf>
- *Blackboard (Bb) Behind the Blackboard* website; find out about Blackboard, the course development software at MCPHS. There are links to great resources for faculty, including excellent tutorials and quick references for using this powerful and EASY application (through Behind the Blackboard). You may need to set up a username and password to use the resources
(<https://behind.blackboard.com/s/faculty/refcenter/docs/browse.Bb>)
- *Creative Training Techniques* website; check out the link for the e-Store for books and materials focused on participant-centered learning.
(<http://www.bobpikegroup.com>)

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The following Web sites are good resources for innovation in teaching:

- *Project Galileo*; class-tested, ready-to-use methods to teach science that can readily be implemented and a number of forums to facilitate nationwide discussion of educational innovation in the sciences.
(<http://galileo.harvard.edu/home.html>)
- *Puzzlemaker*; great resource for adding fun and curiosity to your class presentations. Puzzlemaker is a free puzzle generation tool (you can generate and print your own, customized puzzles directly on this website).
(<http://puzzlemaker.school.discovery.com/>)
- Site with variety of case studies using real-life situations with a humorous style of questioning:
- *Trauma.org: Care of the Injured*
<http://www.trauma.org/index.php/>
- *Case Study Site (Cervical Spine Clearance)*
<http://www.trauma.org/resus/moulagefour/moulagefour.html>

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The following Web sites are good resources for innovation in teaching:

- *The Mazur Method* for interactive lecturing in large science classes; describes two valuable techniques whose use extends far beyond physics alone.
(<http://www.columbia.edu/cu/qsapp/BT/RESEARCH/mazur.html>)
- (<http://www.physics.arizona.edu/physics/news/matters/winter97/mazur.html>)
- *WebQuest* assignments are innovative ways to have students working alone or in groups use the Web as a learning resource. The second link accesses an authoring tool and hosting site for you to easily create a WebQuest.
(<http://webquest.org/>)
- (<http://questgarden.com/>)
- MCPHS Library Online Research Guide: *Teaching Methods*
(http://www.mcphs.edu/libraries/catalogs/research_guides.html). Print and online resources.

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Media References

- Videos and books on innovative teaching. Includes a video of Eric Mazur teaching a class using his "concept test" method.
- <http://bokcenter.harvard.edu/icb/icb.do>
- The Mazur Method: Using Concept Tests
 - <http://www.columbia.edu/cu/qsapp/BT/RESEARCH/mazur.html>
 - <http://www.physics.arizona.edu/physics/news/matters/winter97/mazur.html>
- Derek Bok Center, Harvard U.
 - "Twenty Ways to Make Lectures More Effective"
 - <http://bokcenter.harvard.edu/icb/icb.do>

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OTC Analgesics

L A V O A I N D T A R N T A E
O R A Z S I E N E W I I T H N
H H I S P T F O R Y O C F A I
T S T H I M O A A N D I N A T
N N S A R L R P O L Y A P S N
E V E L I A P K U L V S I K E
M M U M N P U D O B T P F E P
T K A I T Y B T C N N A L T R
N E H P O N I M A T E C A O U
H Q Z V Y O I P M O M U U P T
A M P W N X R O P Y I E N R T
Y S N H W O L A H X N G B O E
S C V C X I H M O W I K H F W
S W C E I X X M R X L G T E J
C L N I P R D H X V U D A N Q

- ◆ ACETAMINOPHEN
- ◆ ASPIRIN
- ◆ CAMPHOR
- ◆ CAPSAICIN
- ◆ IBUPROFEN
- ◆ KETOPROFEN
- ◆ LINIMENT
- ◆ LOTION
- ◆ MENTHOL
- ◆ NAPROXEN
- ◆ OINTMENT
- ◆ TURPENTINE

Internal and External Analgesics

TELAICYSLA

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5

TOEFOKREP

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4

NIOMAHPECNAET

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7

HCRAPMO

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6

TOLNEHM

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3

10

CIACISPAN

--	--	--	--	--	--	--	--	--	--

9

RNREATITRUCNOT

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2

8

1

		B								
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1

2

3

4

5

6

7

8

9

10

Unscramble each of the clue words.

Copy the letters in the numbered cells to other cells with the same number

BINGO

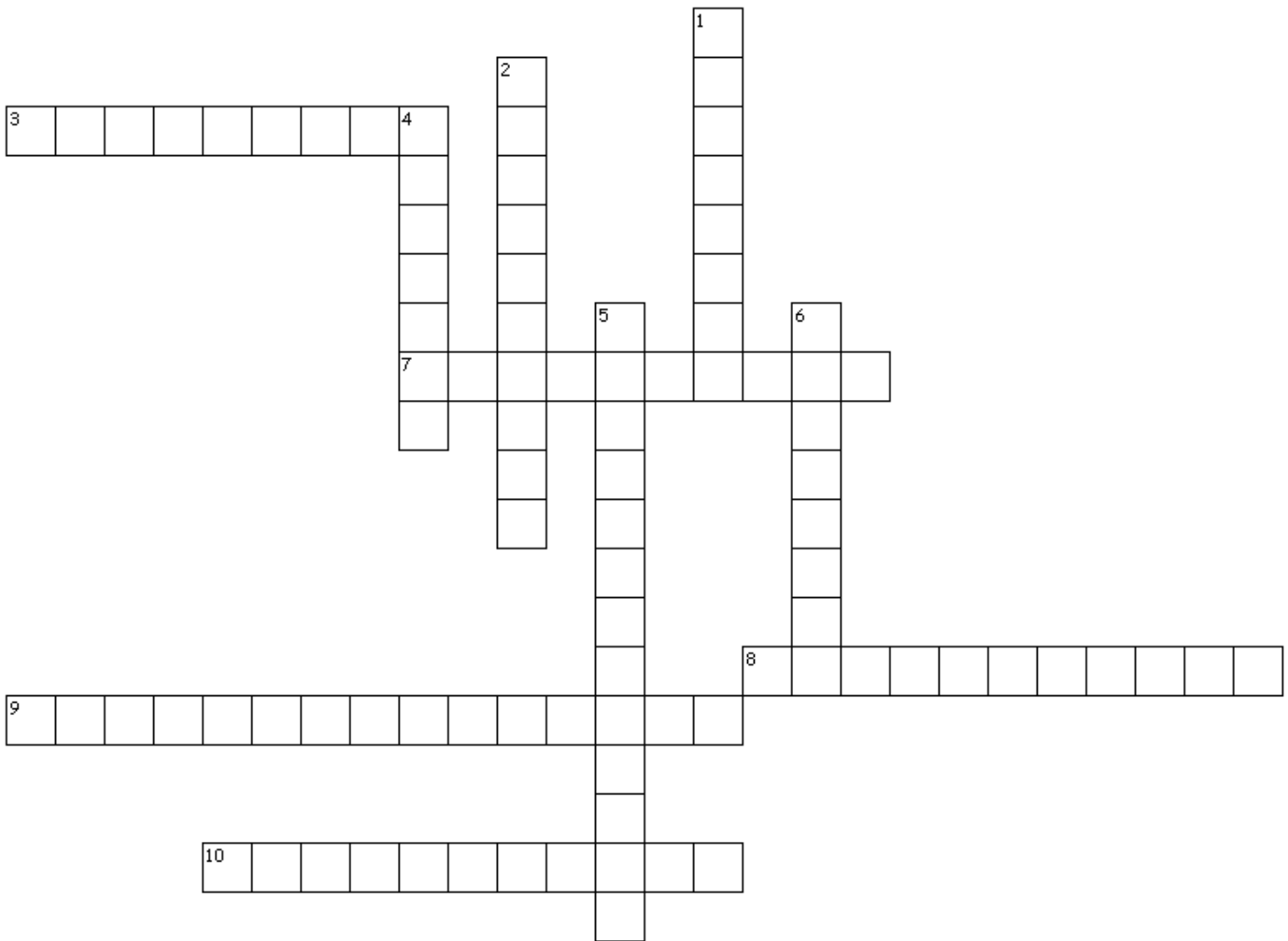
Cough, Cold and Allergy

Has recommended pseudoephedrine to a patient while at work	Can name the 4 anticholinergic SFX of first generation antihistamines	Name 3 conditions where antihistamines should be used cautiously	Is interested in a career in retail pharmacy	<i>Can describe the mechanism of action of antihistamines</i>
Has never worked in a pharmacy	Can list 4 side effects of pseudoephedrine	Can describe rhinitis medicamentosa	Can describe the paradoxical reaction children may have with antihistamines	<i>Can name 6 allergens that cause allergic rhinitis</i>
Can name 6 symptoms of allergic rhinitis	Can describe the role of antihistamines in the treatment of the cold	Free Space	Can list 4 symptoms of a cold	<i>Knows the role of zinc in the cold</i>
Knows the most common virus that causes the cold	Has a family member that is a pharmacist	Can describe the mechanism of action of pseudoephedrine	Can describe the name and role of an OTC antitussive	<i>Has worked in a retail pharmacy for >2 years</i>
<i>Can name the role of cromolyn in allergic rhinitis</i>	<i>Can list the 3 types of pain relievers found in OTC cough and cold products</i>	<i>Can describe the name and role of an OTC expectorant</i>	<i>Can describe the role of nasal wetting agents in allergic rhinitis</i>	<i>Can describe the difference between a humidifier and a vaporizer</i>

Object: Get five squares in a row (horizontal, vertical, or diagonal)

Rules: Find a person who can perform the function in each box and have them initial the box. The first person to get five in a row wins.

Diarrhea and Constipation



Across

3. Enteric coated laxative tablet; do not crush
7. Pathogen that causes diarrhea
8. Drug class that may cause diarrhea
9. A bulk forming laxative
10. An adsorbent

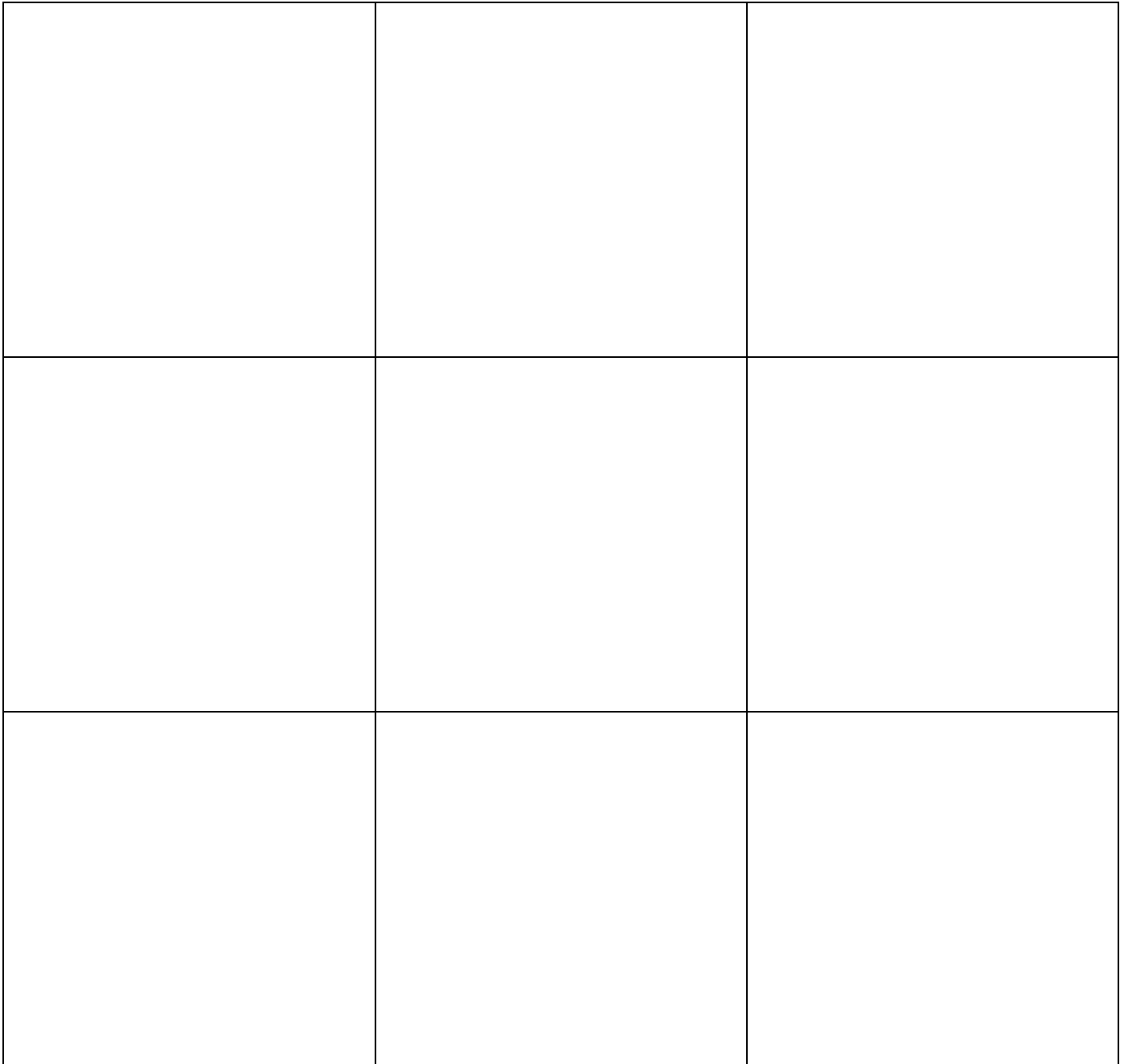
Down

1. A stool softener
2. Type of lubricant that may cause lipid pneumonia
4. Deficiency in this enzyme causes diarrhea
5. Can treat diarrhea or constipation
6. Available in suppositories for children

"Secret Envelopes"

1. What is a validation rating scale for pain? Give 1 example and how is it used?
2. What non pharmacologic and OTC therapy can be recommended to treat DJD (Degenerative Joint Disease)
3. What OTC analgesics can be used for a sinus headache? Are there other OTC products that may be helpful?
4. Should aspirin be used in a patient with a past medical history of gout?
5. Name 3 of the manifestations (consequences) of aspirin allergy
6. Name 2 drugs that may cross-react in patients with aspirin allergy.
7. Name all 3 of the "triad" associated with aspirin allergy
8. Name 3 contraindications of Aspirin.
9. What is the onset of Reyes Syndrome?
10. When does Aspirin need to be discontinued in relation to a surgery when bleeding is a risk?
11. Name 2 differences between Aspirin and the nonacetylated salicylates.
12. What is the concept of "underdosing" of acetaminophen (pediatric drops vs. children's elixer)?
13. What type of patients are at most risk of acetaminophen toxicity and what is the maximum daily dose?
14. What OTC po analgesic can be used by nursing mothers? ASA, Nonacetylated Salicylates, Acetaminophen, Ibuprofen, Naproxen, Ketoprofen
15. What is the significance of drug interactions with Ibuprofen and Methotrexate and Ibuprofen and Lithium?
16. Is it appropriate to use an occlusive dressing with topical counterirritants? Why or Why not?
17. What is the difference between a topical counterirritant and a topical analgesic?
18. Can you use methyl salicylate in a patient allergic to aspirin? Why or why not?
19. Can you use methyl salicylate in a patient taking warfarin? Why or why not?
20. Which of the topical counterirritants cause an initial feeling of coolness followed by warmth?
21. Which of the counterirritants depletes substance P? What is this significance?
22. How are topical irritants applied? How often? Name 3 counseling instructions that should be given?
23. What are 3 questions you should ask a patient to assess their pain? (not choose therapy, just assess pain).
24. What are 3 questions you should ask a patient to determine which OTC analgesic to give them?

WINDOW PANE



Large Classroom Techniques

W V V B V O A T G H W F R P D
U O F X B S C B A R H L A J G
N M N D R S W L R C O M T X N
W O N K O T E C I N D U O C I
Q D D J O A Q V V N I V P W K
B X S W O T C F I L U Q E S N
M L B P X L D M O N Y W N S U
C H T N O L B E J L W Q E L H
X M W S R E V I E W S Q R Z C
V Q E J Y J R K P N P W F D F
N R Z A N B L O C W O Y Y L T
Q K X Z P Y K Q J M F A Z R U
V C Z F A R B R V T O P G G Z
O L M C X Q P D E E F P B Z Q
F R W Z F T R T Q K C P E A C

ABCS

CHUNKING

CLOSER

GROUPS

MINDMAP

NEEDTOKNOW

NICETOKNOW

OPENER

REVIEWS

*Fostering Active Learning in Small and Large Classrooms:
Creative Teaching Techniques*

Jennifer Goldman-Levine, Pharm.D., CDE, BC-ADM

Kate MacDonald, MAT, MEd

The Teaching Professor Conference, May 22, 2010

At the completion of today's session, please tear off this last page and turn into the instructors:

Please evaluate the listed statements by assigning a number that corresponds to the following scale:

- 5 Strongly Agree/Exceptional**
- 4 Agree/Good**
- 3 Neutral/Average**
- 2 Disagree/Fair**
- 1 Strongly Disagree/Poor**

	Assessment (assign a number)
1. The objectives of the presentation were clear.	
2. The instructor had a clear and organized presentation.	
3. The instructor had an engaging presentation and was enthusiastic.	
4. The instructor was open to questions and comments.	
5. The techniques and ideas that were discussed will be helpful in my future teaching.	
6. I intend to implement at least one technique I learned about today.	
7. Overall rating of today's presentation	
8. Please provide any additional comments or feedback to the presenters	

A	N
B	O
C	P
D	Q
E	R
F	S
G	T
H	U
I	V
J	W
K	X
L	Y
M	Z