

The background is a light blue gradient with several realistic water droplets of various sizes scattered across it. The droplets have highlights and shadows, giving them a three-dimensional appearance.

PRODUCTIVE CLASS DISCUSSIONS

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WHICH ONE IS YOUR CLASSROOM??




GUIDELINES TO PRODUCTIVE CLASS DISCUSSIONS:

- EVERY STUDENT HAS TO PARTICIPATE! THEY HAVE TO KNOW THAT THEY MIGHT BE CALLED ON AND/OR THAT THEY WILL BE HELD ACCOUNTABLE FOR THEIR PARTICIPATION. AT FIRST THIS IS DIFFICULT, BUT ONCE THE STUDENTS KNOW YOU AND KNOW EACH OTHER, FEEL COMFORTABLE AND SAFE, AND KNOW YOUR EXPECTATIONS OF THEM, THIS IS EASY.
 - REMEMBER, I LIKE TO HEAR FROM EVERY STUDENT EVERY CLASS (STANDING UNTIL YOU CONTRIBUTE, SITTING/STANDING IF YOU AGREE/DISAGREE, INDIVIDUAL WHITEBOARD WRITING TO COLLECT THOUGHTS, TALLYING SO THAT YOU CAN BE SURE EACH STUDENT IS CONTRIBUTING)
 - YOU CAN DIFFERENTIATE THE LEVEL OF QUESTIONS BASED ON WHAT YOU KNOW CERTAIN STUDENTS CAN ANSWER. ASK LOWER LEVEL STUDENTS EARLY ON BEFORE BUILDING TO HIGHER LEVEL QUESTIONS THAT THEY MIGHT NOT BE ABLE TO ANSWER. OR ASKING LOWER LEVEL STUDENTS TO DO THINGS LIKE REPHRASE WHAT ANOTHER STUDENT SAID IS ALSO A GOOD OPTION.
- AFTER CONTRIBUTING, WAIT UNTIL AT LEAST TWO MORE STUDENTS HAVE SPOKEN BEFORE YOU SPEAK AGAIN.
- WHEN YOU ARE CONTRIBUTING, LOOK AT THE CLASS/ YOUR PEERS NOT ME!! THIS IS A CLASS DISCUSSION- YOUR PEERS ARE PROVIDING THE ANSWERS/RESPONSES NOT ME.
 - IS YOUR CLASSROOM SET UP IN A WAY CONDUCIVE TO PRODUCTIVE CLASS DISCUSSIONS- THINK ABOUT IT?? DESKS IN ROWS VS. A CIRCULAR FORMATION OR GROUPS- WHICH IS MORE APPROPRIATE FOR PRODUCTIVE DISCUSSION?



MOST IMPORTANT GOAL: ALLOWING PROPER WAIT TIME FOR INDIVIDUAL STUDENTS SHARE, EXPANDING, AND CLARIFYING THEIR OWN THINKING AND IDEAS

- TIME TO THINK: IF YOU DON'T GIVE ALL STUDENTS TIME TO THINK INDIVIDUALLY, HOW WOULD YOU POSSIBLY HAVE A PRODUCTIVE CLASS DISCUSSION WITH EVERYONE PARTICIPATING??
 - MAKE SURE EVERY STUDENT UNDERSTANDS THE QUESTION/PROMPT
 - PROPER WAIT TIME
 - WRITING AS THINK TIME TO CLARIFY THOUGHTS
 - STAND WHEN YOU ARE READY WITH A RESPONSE
 - IF YOU DO THIS WELL, YOU WILL BE MORE SUCCESSFUL AT HEARING FROM EVERY STUDENT EVERY CLASS DISCUSSION.
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SECOND MOST IMPORTANT GOAL: **STUDENTS LISTENING CAREFULLY TO ONE ANOTHER**

- OFTEN TIMES WE WANT MULTIPLE RESPONSES BEFORE WE MAKE ANY COMMENTS. IF THIS IS THE CASE, REQUIRE STUDENTS TO SUMMARIZE THE PREVIOUS SPEAKER'S RESPONSE BEFORE GIVING THEIR OWN COMMENTS.
- IF STUDENTS TALKED TO THEIR SHOULDER PARTNER...
 - ASK THEIR PARTNER TO REPHRASE WHAT THEIR PARTNER THOUGHT (NOT WHAT THEY THOUGHT!!)
- IF STUDENTS ANSWER OUT LOUD TO THE CLASS...
 - ASK ANOTHER STUDENT TO REPEAT OR REPHRASE THAT (EXAMPLE: CAN ANYONE PUT THAT IN THEIR OWN WORDS? WHO THINKS THEY CAN REPEAT THAT?)

GOAL: STUDENTS SHARE RESPONSES AND MAKE IT BENEFICIAL TO THE WHOLE CLASS

- ONCE STUDENTS HAVE THEIR OWN THOUGHT/ANSWER/QUESTION TO YOUR QUESTION...
 - HAVE STUDENTS SHARE THEIR THOUGHTS WITH THEIR SHOULDER PARTNER
 - THIS WILL BE A GREAT OPTION TO AVOID WRONG ANSWERS FROM THE BEGINNING OF THE DISCUSSION. STUDENTS WILL OFTEN CORRECT THEIR OWN MISCONCEPTIONS ONCE TALKING IT OUT WITH THEIR PARTNER AND HEARING THEIR PARTNERS RESPONSE.
 - HAVE STUDENT(S) RESPOND OUT LOUD TO THE CLASS
 - REMEMBER, THEY SHOULD SPEAK TO THE CLASS, NOT YOU!!
 - ALLOW STUDENTS TO RESPOND DIRECTLY TO THE STUDENT COMMENT BEFORE YOU SAY ANYTHING. BUT OFTEN TIMES, THE TEACHER DOES NEED TO PROMPT THE NEXT STEPS FOR THE DISCUSSION TO TAKE OFF

GOAL: RESPOND SAFELY / APPROPRIATELY TO RESPONSES THAT ARE INCOMPLETE, WRONG, OR PRESENT MISCONCEPTIONS

- YOU THINK: THAT'S THE COMPLETE WRONG ANSWER, BUT IT MIGHT BE PRODUCTIVE TO DISCUSS IT BECAUSE OTHERS ARE PROBABLY THINKING THIS SAME WAY
 - WELL REMEMBER WHEN WE DID THE ACTIVITY WHERE WE DEMONSTRATED.... OR REMEMBER WHEN WE READ THE ARTICLE WHERE WE LEARNED...THINK BACK...WHAT WAS THAT TEACHING US??
 - MY FAVORITE IS...THANK YOU FOR GIVING ME THIS TEACHING MOMENT...
 - **NEVER EVER JUST GIVE UP THE ANSWER!**
- YOU THINK: HUH? WHAT ARE THEY TALKING ABOUT?
 - CAN YOU SAY MORE ABOUT THAT?
 - CAN YOU GIVE ME AN EXAMPLE OF WHAT YOU MEAN?
 - LET ME SEE IF I UNDERSTAND...ARE YOU SAYING THAT...?
 - **NEVER EVER JUST GIVE UP THE CORRECT ANSWER!**
- YOU THINK: YOU MAY HAVE SOMETHING, BUT YOU ARE NOT EVEN CLOSE YET...
 - WHO CAN ADD ON TO AN IDEA THAT EMILY IS BUILDING?
 - CAN ANYONE TAKE JOHN'S RESPONSE AND PUSH IT A LITTLE FURTHER?
 - **NEVER EVER JUST GIVE UP THE CORRECT ANSWER!**

GOAL: TO HAVE STUDENTS THINK WITH OTHER STUDENTS AND CONNECT WITH THE IDEA

- DO YOU AGREE OR DISAGREE WITH KATE'S RESPONSE AND WHY? BE CAREFUL- MAKE SURE THAT STUDENTS ARE ADDRESSING THE IDEAS, NOT THE PERSON! THIS IS ALSO AN OPPORTUNITY TO ENSURE THAT THEY ARE LISTENING TO THEIR CLASSMATES AND TO GET THEM MOVING POSSIBLY.
- WHAT QUESTIONS DO YOU HAVE ABOUT THIS IDEA?
- DOES ANYONE HAVE A DIFFERENT VIEW?
- WHO CAN ADD ON TO WHAT HE/SHE JUST SAID?
- WHAT DO YOU THINK ABOUT THAT IDEA?
- WHAT DO PEOPLE THINK ABOUT WHAT BRIAN SAID?
- DOES ANYONE WANT TO RESPOND TO THAT IDEA?



GOAL: DIGGING DEEPER INTO A STUDENT RESPONSE

- WHY DO YOU THINK THAT?
- WHAT LED YOU TO THINK ABOUT IT THAT WAY?
- WHAT'S THE EVIDENCE YOU USED?
- EXPLAIN YOUR REASONING TO US?
- HOW DID YOU FIGURE THAT OUT?



GOAL: CHALLENGE AND PUSH A STUDENT'S CORRECT RESPONSE

- DOES IT ALWAYS WORK THAT WAY?
- WHAT IF IT HAD BEEN A COPPER CUBE INSTEAD OF AN GOLD CUBE?

WHAT TYPES OF QUESTIONS PROMOTE THE BEST DISCUSSIONS??

- NOT QUESTIONS WHERE THEY ARE JUST REGURGITATING INFORMATION!!
- QUESTIONS THAT REQUIRE STUDENTS TO THINK.
 - DESCRIBE
 - EXPLAIN
 - CLASSIFY
 - COMPARE AND CONTRAST
 - PREDICT
 - PRETEND
 - SUGGEST
 - DECIDE
 - DEFEND
 - CONCLUDE

EXAMPLE #1

QUESTION: PREDICT WHICH HAS MORE MASS- AN ICE CUBE TRAY FILLED WITH LIQUID WATER OR AN ICE CUBE TRAY FILLED WITH FROZEN ICE CUBES?

- INDIVIDUAL- WRITE YOUR RESPONSE DOWN ON THE WHITEBOARDS, DESKS, NOTABILITY WITH SOME REASONING BEHIND WHY YOU CHOSE WHAT YOU CHOSE. DECIDE WHAT YOU THINK AND STAND WHEN YOU HAVE AN IDEA WITH A REASON WHY?
- SHARING- TURN TO YOUR SHOULDER PARTNER AND TAKE TURNS SHARING YOUR THOUGHTS
- EITHER ASK A FEW STUDENTS WHAT THEIR PARTNER THOUGHT AND WHY OR ASK STUDENTS TO MOVE TO A CERTAIN AREA IN THE ROOM IF THEY THINK SOLID ICE WEIGHS MORE, MOVE TO A CERTAIN AREA IS THEY THINK LIQUID WATER WEIGHS MORE, OR MOVE TO A CERTAIN AREA IF BOTH HAVE THE SAME MASS.
- YOU CAN ASK THESE GROUPS TO PUT THEIR BRAINS TOGETHER AND USE SCIENTIFIC CONCEPTS/TERMS TO EXPLAIN YOUR REASONING. I WILL CALL ON ONE PERSON TO EXPLAIN THE GROUP'S REASONING.



EXAMPLE #2

QUESTION: COMPARE THESE LEAVES. WRITE DOWN
WHAT THEY ALL HAVE IN COMMON.

EXAMPLE #3

SHOULD EVERYONE HAVE THEIR DNA AND FINGERPRINTS
PUT INTO THE FBI DATABASES FROM BIRTH? EXPLAIN WHY
OR WHY NOT?