

THINKING TASKS

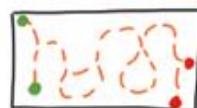
"PROBLEM-SOLVING IS WHAT WE DO WHEN WE DON'T KNOW WHAT TO DO."

GIVE **PROBLEM SOLVING** TASKS

CARD TRICKS

NUMERACY TASKS

HIGHLY ENGAGING THINKING TASKS



NONLINEAR
MESSY
NON-ROUTINE

FIRST 5 MINUTES

NONCURRICULAR TASKS

↳ START WITH THESE

↳ POSE AS CHALLENGES

SCRIPTED CURRICULAR TASKS

↳ SWITCH TO THESE

↳ POSE AS CHALLENGES

AS-IS CURRICULAR TASKS

↳ AVOID THESE

↳ PROMOTE MIMICKING

MIMICKING ≠ THINKING

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- MULTIPLE ENTRY POINTS
- CHALLENGE FOR ALL STUDENTS
- HIGH EXPECTATIONS FOR ALL STUDENTS TO THINK

VRG



FLIPPITY

VISIBLY RANDOM GROUPS

TIPS FOR VRG SUCCESS



NEEDS TO BE VISIBLE



SWITCH GROUPS EVERY HOUR/TASK



NO INDEPENDENT THINK TIME BEFORE COLLABORATING



EXPLICITLY TEACH AND GIVE FEEDBACK ON INCLUSIVE AND EFFECTIVE COLLABORATION



KNOWLEDGE MOBILITY

RELIANCE ON TEACHER

BORROWING IDEAS → KEEP THINKING

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- ELIMINATION OF SOCIAL BARRIERS
- WILLINGNESS TO COLLABORATE
- MORE STUDENTS DO MORE THINKING
- KNOWLEDGE COMES FROM GROUPS
- PUTS STUDENTS' UNBELIEVABLE CAPACITY FOR EMPATHY IN MOTION

VNPS

VERTICAL
NON
PERMANENT
SURFACES

INCREASED
KNOWLEDGE
MOBILITY



→ BETTER POSTURE

→ IMPROVED MOOD

→ INCREASED ENERGY

TIPS FOR VNPS SUCCESS

• CLOSE NOT CROWDED



• ONE MARKER PER GROUP



• THOUGHTS WRITTEN BY SOMEONE ELSE

• HOLD MEMBERS ACCOUNTABLE TO EXPLAIN GROUP'S THINKING

• DIFFERENT COLOUR MARKER



FOR THE TEACHER



• KEEP OLD/WRONG THINKING

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- INCREASED RELIANCE ON EACH OTHER INSTEAD OF TEACHER
- STUDENTS DO NOT FEEL ANONYMOUS WHEN STANDING
- OPPORTUNITIES FOR REAL-TIME DIFFERENTIATION
- NEW COMPETENCIES EMERGE
- SKILLS DEVELOPED: PATIENCE, COMMUNICATION, PERSEVERANCE

CONSIDERATIONS FOR

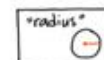
MULTILINGUAL LEARNERS

ENGLISH ARABIC
MANDARIN FARSI
TURKISH SWAHILI

CONNECTIONS TO AND USE OF PRIMARY LANGUAGE



PROVIDE CONVERSATIONAL STRATEGIES



MAKE TERMS VISIBLE AND VISUAL



LISTEN AND OBSERVE TO PROVIDE SCAFFOLDS AS NEEDED

SPECIAL EDUCATION SUPPORTS



INDIVIDUALIZED SUPPORTS (rehearsal, targeted grouping) FOR SOCIAL INTERACTIONS



PHYSICAL ACCOMMODATIONS IF NEEDED



ONE MARKER PER GROUP IS "NATURAL" SCRIBING

UNIVERSAL DESIGN FOR LEARNING



NAME CARDS TO MAKE PRONUNCIATION VISIBLE



LOW STAKES TASKS TO LEARN COLLABORATION SKILLS FIRST



VALUE AND CONNECT TO LIVED EXPERIENCES, INTERESTS, AND CULTURE



MAKE AVAILABLE AND ENCOURAGE USE OF CONCRETE MATERIALS AND MANIPULATIVES

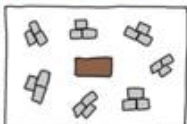
BUILDING THINKING CLASSROOMS
PETER ULJEDEHL @pjljedahl

CORWIN, 2020

COLLABORATION WITH @WRDSB EDUCATORS
SKETCHNOTE: @alinda K'lussen

DEFRONT

DEFRONT CLASSROOM



DESKS IN DIFFERENT DIRECTIONS

- STUDENT COLLABORATION
- TEACHER TALKING
- TEACHER CIRCULATION

FURNITURE PLACEMENT

TEACHERS' INTENTIONS ACTIONS

THINKING IS MESSY

- STRAIGHTNESS
- SYMMETRY
- FRONTING
- DE-STRAIGHTEN
- DE-SYMMETRIZE
- DE-FRONT

PASSIVE LEARNING

ACTIVE THINKING

NOT TOO CHAOTIC OR ORGANIZED

- SAFETY TO TAKE RISKS
- FREEDOM TO TRY + FAIL

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- SHIFTS POWER AWAY FROM TEACHER ONTO STUDENTS
- MORE STUDENTS ENGAGE MORE FREELY

KEEP THINKING Qs

- PROXIMITY Qs DON'T ANSWER
- STOP THINKING Qs DON'T ANSWER
- KEEP THINKING Qs ANSWER THESE

KEEP THINKING QUESTIONS CLUES

- AVOID QUESTIONS ASKED EARLY IN TASKS
- ARE QUESTIONS ASKING FOR MORE OR LESS ACTIVITY, WORK OR THINKING?

ANSWER A QUESTION WITH A QUESTION ... THEN LEAVE!

ISN'T THAT INTERESTING?
IS THAT ALWAYS TRUE?
WHY DO YOU THINK THAT IS?
WHY DON'T YOU TRY SOMETHING ELSE?
ARE YOU ASKING ME OR TELLING ME?

AVOID GIVING TOO MUCH HELP/INFO

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- ONUS ON STUDENTS TO DO THE THINKING
- STUDENTS UNDERSTAND THEY NEED TO DO THE WORK
- STUDENTS ARE HEARD BUT EMPOWERED NOT HELPLESS

VERBAL INSTRUCTIONS

WHEN TO GIVE TASKS

- EARLY IN LESSON
- STUDENT ENERGY
- TEACHER PRETEACHING
- BEGINNING OF LESSON
- TEACHER ADDRESSES WHOLE CLASS

WHERE TO GIVE TASKS

- STANDING + CLUSTERED
- STUDENTS FASTER TO TASK
- FEWER QUESTIONS ASKED
- FIND LOCATION WITH ENOUGH SPACE TO BE COMFORTABLE

HOW TO GIVE TASKS

- VERBALLY, WITH KEY INFO WRITTEN WHILE TALKING
- STUDENT TALKING ABOUT MATHEMATICS/TASK
- AMOUNT OF DECODING WITH TEXTUAL INSTRUCTIONS
- NUMBER OF QUESTIONS ASKED

- AVOID SAME SPOT TO WRITE EACH TIME
- RECORD IMPORTANT DETAILS BUT NOT ENTIRE SCENARIO

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- STUDENTS RELY ON EACH OTHER TO FIGURE OUT WHAT TO DO
- "STORYTELLING" APPROACH IS ACCESSIBLE

CHECK UNDERSTANDING Q

- "HOMEWORK" → FOR TEACHER FOR MARKS MIMICKING
- "CHANGE NAME" → FOR STUDENTS FOR UNDERSTANDING THINKING
- "CHECK-YOUR-UNDERSTANDING QUESTIONS"

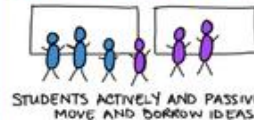
TIPS FOR CYUQs SUCCESS

- TALK ABOUT THEM AS OPPORTUNITIES TO LEARN FROM MISTAKES (NO RISK)
- AVOID "PRACTICE" AS IT SUGGESTS MIMICKING
- AVOID "ASSIGNMENT" AS IT SUGGESTS MARKS
- PROVIDE ANSWER KEY
- PROVIDE AUTONOMY ON WHETHER IT IS COMPLETED
- NOT FOR MARKS
- PROVIDE WORKED SOLUTIONS LATER - AFTER STUDENTS HAVE TRIED PROBLEMS

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- STUDENTS HAVE AUTONOMY
- SPACE TO MAKE AND LEARN FROM MISTAKES
- STUDENTS DO NOT HAVE TO BALANCE PRESSURE OF MARKS WITH HOME LIFE DEMANDS
- STUDENTS CHOOSE WHEN, HOW AND IF TO DO THEM

MOBILIZE KNOWLEDGE



TEACHER MOVES

- REDIRECT GROUPS TO OTHER GROUPS WHEN STUCK
- HAVE GROUPS WITH DIFFERENT ANSWERS TALK TOGETHER
- HAVE GROUPS WITH DIFFERENT APPROACHES TALK TOGETHER
- BE LESS HELPFUL

EFFECTS OF KNOWLEDGE MOBILITY...

- STUDENT INDEPENDENCE
- DEPTH IN THINKING
- SHIELDING WORK
- POROSITY BETWEEN GROUPS
- SENSE OF ALL HAVING SOMETHING TO OFFER

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- SENSE OF LARGER COLLECTIVE LEARNING TOGETHER
- RELIANCE ON PEERS INSTEAD OF TEACHER
- EMPOWERMENT OF STUDENTS LEADS TO INDEPENDENCE

CONSIDERATIONS FOR

MULTILINGUAL LEARNERS

- MAKE KEY WORDS, SYMBOLS, VISUALS VISIBLE TO ALL
- ENCOURAGE USE OF TRANSLATION TOOLS
- ENCOURAGE USE OF PRIMARY LANGUAGE
- GIVE SENTENCE STEMS FOR GROUP DISCUSSION
- LISTEN AND OBSERVE TO PROVIDE SCAFFOLDS AS NEEDED

SPECIAL EDUCATION SUPPORTS

- STAND CLOSE TO/BE AWARE OF STUDENTS NEEDING AUDITORY ACCOMMODATIONS
- COGNITIVE LOAD REDUCED BY VISUAL CUES THAT ACCOMPANY VERBAL INSTRUCTIONS
- EXPLAIN BEFOREHAND QUESTIONS THAT WILL BE ANSWERED
- EVERY STUDENT CAN ACCESS "PREFERENTIAL" SEATING

UNIVERSAL DESIGN FOR LEARNING

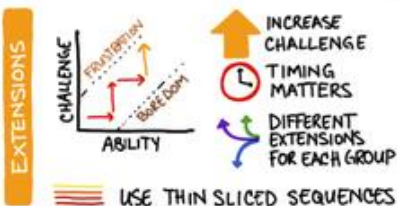
- PROVIDE CHOICE WITH CHECK-YOUR-UNDERSTANDING Qs
- ENSURE ALL STUDENTS HAVE ACCESS TO INSTRUCTIONS

BUILDING THINKING CLASSROOMS
PETER LITTON & JONATHAN LITTON
CORINNA, 2020
COLLABORATION WITH 18 MIDDLE EDUCATORS
SKETCHNOTE: 15 minutes / 1 lesson

HINTS + EXTENSIONS



TIPS TO MAINTAIN FLOW



BUILD ENGAGED STUDENTS WHO ARE WILLING TO THINK ABOUT ANY TASK

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- ACCESS FOR ALL TO START TASK
- TIMELY HINTS AND EXTENSIONS FOR SPECIFIC STUDENTS/GROUPS
- STUDENTS PROVIDE FEEDBACK TO EACH OTHER ⇒ FLOW

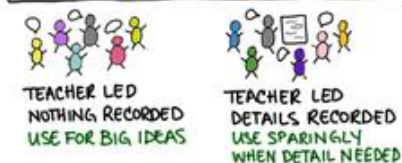
CONSOLIDATE ↑



TIPS TO CONSOLIDATE FROM BOTTOM



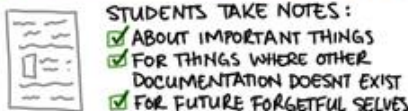
ALTERNATIVE STRATEGIES



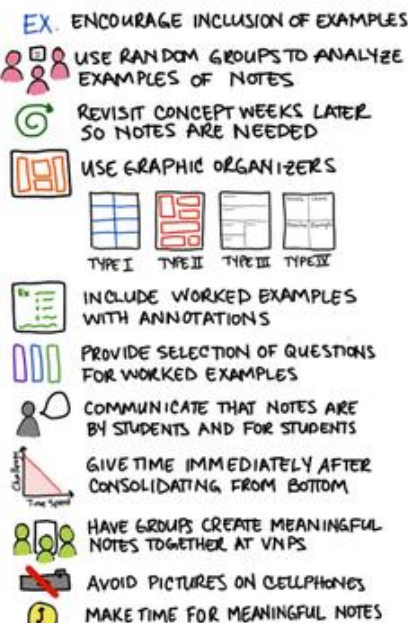
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- ALL STUDENTS CAN ACCESS CONSOLIDATION FROM START
- KNOWLEDGE CONSTRUCTED BY CLASS NOT TEACHER
- STUDENTS RESPONSIBLE FOR OTHERS' THINKING
- TEACHER RESPONDS TO WHERE STUDENTS GET TO

MEANINGFUL NOTES



TIPS FOR MEANINGFUL NOTES SUCCESS



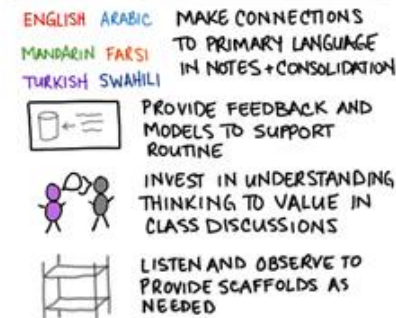
COLLECTIVE KNOWING DOING → INDIVIDUAL KNOWING DOING

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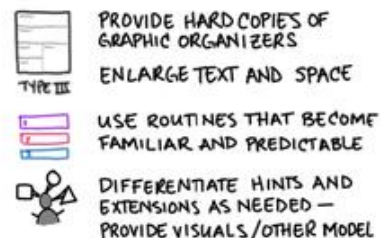
- STUDENTS TAKE OWNERSHIP OF NOTE-TAKING AND RECORD WHAT/HOW IS MEANINGFUL TO THEM
- BUILDS INDEPENDENCE THROUGH ROUTINE, SCAFFOLDS, AUTONOMY
- TEACHERS GAIN SENSE OF WHAT IS VALUED BY OBSERVING NOTES

CONSIDERATIONS FOR

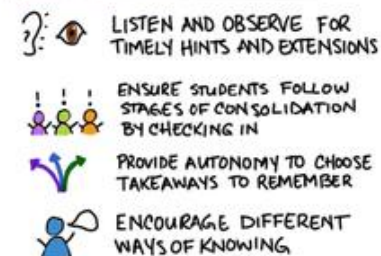
MULTILINGUAL LEARNERS



SPECIAL EDUCATION SUPPORTS



UNIVERSAL DESIGN FOR LEARNING



BUILDING THINKING CLASSROOMS
PETER ULSTEADHILL @pghjedahl
CORWIN, 2020
COLLABORATION WITH @WDSB EDUCATORS
SKETCHNOTE: @alinda.k.lissner

EVALUATE WHAT YOU VALUE

ESSENTIAL COMPETENCIES

- PERSEVERANCE
- WILLINGNESS TO TAKE RISKS
- ABILITY TO COLLABORATE

TIPS TO REDESIGN RUBRICS

- REMOVE
- HEADINGS
 - MIDDLE COLUMNS

- CREATE WITH CLASS
- LIMIT TO FIVE COMPETENCIES
 - USE OPPOSING LANGUAGE

FOCUS ON WHERE - NOT WHO - STUDENTS ARE

TIPS FOR USING RUBRICS



- FOCUS ON THREE GROUPS AT A TIME
- PROVIDE FEEDBACK USING RUBRIC
- USE PROCESS AS NEEDED TO ESTABLISH AND RE-ESTABLISH CULTURE

FOR NON-OBSERVATIONAL BEHAVIOURS

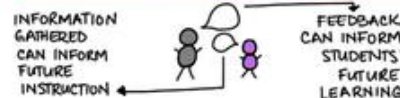
- EXEMPLAR 1 EXEMPLAR 2 EXEMPLAR 3
- CREATE RUBRIC BY ANALYZING THREE EXEMPLARS WITH CLASS

WHAT WE CHOOSE TO EVALUATE TELLS STUDENTS WHAT WE VALUE

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- TRANSPARENCY AND STUDENT OWNERSHIP ARE FOSTERED
- DECISION-MAKING IS SHARED
- COLLECTIVIST CULTURAL NORMS ARE VALUED

NAVIGATION



NAVIGATION INSTRUMENT TIPS



THE HOW

- STUDENTS USE NAVIGATION TOOLS TO SELF-EVALUATE AND TRACK EVIDENCE FROM QUIZ, REVIEW TEST OR CHECK YOUR UNDERSTANDING
- STUDENTS NEED TO IDENTIFY IF THEY NEEDED HELP
- HEADING TITLES NEED TO DESCRIBE COMPLEXITY OF PROBLEMS NOT STUDENT ABILITY



THE WHY

- STUDENTS NEED TO SEE DISTINCTION BETWEEN SUBTOPICS BEFORE MAKING CONNECTIONS
- STUDENTS TAKE NAVIGATION DATA MORE SERIOUSLY THAN FEEDBACK FROM OPINION-BASED SELF-ASSESSMENT

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- STUDENTS HAVE DIFFERENT ACCESS POINTS TO CONTENT
- SELF-ASSESSMENT SUPPORTS STUDENTS IN GOAL-SETTING
- ASSESSMENT PRACTICES THAT INFORM TEACHING AND LEARNING

DATA-BASED

HOW DO WE KNOW WHERE STUDENTS ARE IN THEIR LEARNING?

POINTS-BASED PARADIGM → DATA-BASED PARADIGM

DATA COLLECTION INSTRUMENT

	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓
	✓	✓	✓	✓

- RECORD ALL DATA IN ONE PLACE
- PRODUCT VS OBSERVATION VS CONVERSATION DOESN'T MATTER
- USE SAME SYMBOLS AS NAVIGATION INSTRUMENT
- TWO CONSECUTIVE DEMOS NEEDED TO SHOW ATTAINMENT

✓✓ = 2 ✓✓✓ = 3 ✓✓✓✓ = 4

USE INSTRUMENT TO IDENTIFY WHEN TO HUNT FOR NOT GATHER EVIDENCE

FOUNDATIONAL PRINCIPLES

- EASY BASIC = MINIMAL ATTAINMENT OF OUTCOME
- ✓ + ✓ + ✓ = BACKWARDS COMPATIBILITY MEANS EVIDENCE OF ADVANCED INCLUDES BOTH INTERMEDIATE AND BASIC

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- ATTENTION PAID TO THE HUMAN ELEMENTS OF LEARNING VS GRADING
- TEACHERS LET GO OF OUTLIERES AND EARLY-NOT-KNOWING
- PICTURE OF WHERE STUDENTS ARE LEADS TO DIFFERENTIATED OPPORTUNITIES TO IMPROVE

CONSIDERATIONS FOR

MULTILINGUAL LEARNERS

- USE SIMPLE LANGUAGE OR VISUALS FOR RUBRICS
- SIMPLIFY LANGUAGE AND MAKE CONNECTIONS TO PRIMARY LANGUAGE
- INVITE STRATEGIC LANGUAGE GROUPINGS WHEN APPROPRIATE
- LISTEN AND OBSERVE TO PROVIDE SCAFFOLDS AS NEEDED

SPECIAL EDUCATION SUPPORTS

- CHUNK NAVIGATION TOOL SUBTOPICS FOR EASE OF USE
- CREATE ROUTINE FOR USING NAVIGATION TOOL
- USE STRATEGIC SMALL GROUPS TO MODEL/SCAFFOLD ROUTINES
- PROVIDE BASIC (OR INTERMEDIATE OR ADVANCED) ONLY OPPORTUNITIES AS NEEDED FOR CERTAIN STUDENTS

UNIVERSAL DESIGN FOR LEARNING

- MAKE RUBRICS VISIBLE FOR CLASS AS ANCHOR CHARTS
- NAVIGATION INSTRUMENT IS SCAFFOLDING FOR GOAL-SETTING AND SELF-ASSESSMENT
- MODEL USE OF NAVIGATION INSTRUMENT

BUILDING THINKING CLASSROOMS
PETER ULTEDAHL @pjhedaahl
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