Habit of Inquiry and Math Menus: Master Class Agenda
Instructional Tools That Inspire Students to Take Hold of Their Own Math Learning
EL National Conference 2014------------Presenters: Corey Goodrich & Ali Morgan, Odyssey School of Denver
http://bit.ly/1FWf2Ll

Learning Targets:
I can increase my instructional toolkit to drive students to be leaders of their own learning.
- ➢ I can describe how the **habit of Inquiry** supports math instruction and drives students to be leaders in their own learning.
- ➢ I can describe how **math menus** drive students to be leaders of their own learning.

Sequenced Step & Time	Description	Instructional Moves/ Steps Who Does What	Commitments
Opening reading and framing of master class (8:05-8:10 min)	Welcome & our intros Intros between participants using Climer Cards Quickly do this. Turn and talk to same person about about connections to the reading: ● What connections do you have to this quote? ● How does it relate to your teaching world? ● Why did you choose this workshop?	Ali:	Make 12 more climer cards put climer cards on each table ~~Ali will look for a quote from books.~~
Grapple (8:10-8:20 min)	Give quick grapple background – the important thing to name with this is that you call it "Grapple" explicitly with kids too- sometimes teachers miss that part. Just give a very quick one sentence, this is language we use with kids and ourselves and in case you don't know it means.... Ask participants to access folder through bitly link: http://bit.ly/1FWf2Ll Participants find **grapple** and open link. 3-4 minutes to look at the Grapple	Corey: elevate MelYann's Inquiry paragraph	Corey: Make copies to post of Inquiry Projects Post MelYann's as GRAPPLE Cassidy & Seraphina for menu

	In partners: Participants view students' culminating math product with the following guiding questions: ● What steps did students take to get there? ● What evidence of mathematical understanding is shown? ● Where is problem-solving evident? [If it seems helpful or natural: Corey and Ali chart participants inferences as they share out.]		
Frame targets & Pre-Assessment (8:20-8:35)	Pause & look at targets all together on PPoint & Ali Frames Then, Participants meet by Climer card groupings at a set of targets to discuss . ● What do these targets mean we will be working on in today's master class? ● What connections can you make between the student product you just saw and the targets? ==Pass out note-catcher as participants go back to seats.== Participants read targets and self-assess, answering these questions: ● Where are you in relation to today's targets? ● How do you know? ● What do you still need or want to know? Corey & Ali do any other framing to clarify session targets.	Ali: Targets will be on the PP These questions will be on PP Targets should be on anchor chart- get Katie to do this for us. ==Katie/ Jon pass out note-catcher while groups are at the targets== Corey: these are questions that we use with kids	Copies of Note Catchers ==Copies of Targets for wall== ==Copies of inquiry criteria on wall== Color code anchor charts/ put symbol. Have at least 6 charts of targets around. ==Katie: (Title?) structures or protocols that we're running that are elements of what we asks kids to do==

Set the Context (8:35-8:40 min)	Corey & Ali quickly give context of what we've been working on in our math instruction:
	
	What is compelling to US about this work?
	Why we think it the right fit for the workshop?
	
	KEEP THIS SHORT(use bullets in pp)
	● Ali: Math menus as an instructional practice
	   ○ our evolution to using math menus for our math instruction
	   ○ highlight purpose and implementation
	● Corey: Habit of Inquiry and its use and focus at Odyssey
	   ○ highlight purpose and implementation
		Ali: intro the connection to the conference's theme
		Ali- math menus
		Corey- Inquiry
		The structures & routines free us up to be responsive in the classroom.
		
		Leverage "students as leaders of their own learning" here.	

Jump into the Student Experience (mini-lesson/ think aloud) 8:40-8:50	Pass out blank student Menu C Corey: Looking at a menu & with Inquiry criteria on PP, Participants keep student projects in mind as they answer these questions: ● What path of menu choices might the student have completed to get to this final project? ● Which Inquiry strategies might have supported her understanding?	Katie- Jon: Pass out/ student menu. Corey: frame menu: true student resource in terms of how it's structured and the content that is on it. You might have questions about how kids use menus and how these work, but trust….	

	This is the first time that they are seeing a menu, so this will help participants understand what it looks like for a student and how they will use their own menus.	zoom in now on the choices that kids have & what choices they might make So, For example, in the student work, I saw that ....., so this might mean that they had to....	
My Next Steps on the Menu (8:50-9:00 min)	Ali Frame making menu choices:: These choices will help participants understand these tools on a deeper level and guide their work during the work-time. **One reason we're showing you the student pathway is to support you as you move into independent part of this workshop, working towards our workshop targets.** Then, do Mid-class assessment. Participants look at questions again and chart on note-catcher. ● Where are you in relation to today's target? ● How do you know? ● What do you still need or want to know? Pass out menu. Give read time. Highlight a few things: ● all items linked in participant folder (demonstrate opening one) ● Corey and Ali have will each offer mini-lessons Participants think about where they need to go in terms of the target and make choices for their independent work time. Make plan.	<mark>At this point, pass out/ show their menu</mark>, with what they just did as one of the items. Might need to explicitly frame: We model filling out menu and thinking through connections, next steps and how they will go after it in their menu.	

	Pair/share: What are your first menu steps and what do you hope to get out of them?		
Participants Work-time: (9:00-9:40 min)	Individual work time on menus and inquiry.	Ali & Corey will be doing mini-lessons and conferring during this time.	Ali- finalize menu put in video links make final menu with links (can pdf's have links) erase these menu items when we've resolved bitly for drop box
Mini-lessons: (9:30-9:40)	Announce times and participants will select: ● Student Advocacy & Ownership in Menus- Ali 　○ I can describe how **math menus** drive students to be leaders of their own learning. ● Menu Design and Differentiation- Corey	Ali & Corey- we will design the targets of these together, and then just divide and conquer to plan for them. Student Advocacy: ● I can identify instructional moves that support student advocacy and ownership in their menu work. Main take-aways: ❏ criteria list as a tool/indicator ❏ answer key- role & purpose	

		❏ pre-assessment & relation to menu choice ❏ teacher feedback- daily work assessed ❏ menu tracking and menu plans ❏ revision checklist ❏ responsibility work (previous years) Menu Design: ● I can identify elements of menu design that support differentiation. Main take-aways: Give; powerpoint; slide the explains the steps (maybe like 6) Notecards for questions so I can answer patterns ❏ 4-6 main steps/ considerations in making a menu ❏ connections to 2.0? ❏ do all the planning up front so that all kids can be in charge and we can be more responsive	
Sharing 9:40-9:50	Ali Discuss their new understandings of how menus/inquiry both support students be in charge of their own learning.	Final self-assessment on menu.	

	On own: Do final assessment on targets (on menu) Then, in pairs ● In your first partnership: talk about something you learned about Inquiry and how it helps students construct understanding. ● In your second partnership: identify something you learned about menus and how they support students in taking ownership for their learning.	Use climer card colors and shapes for finding new partners for discussion.	
	Corey Whole group. Participants connect student learning to Mathematical Practices document. -this may seem like an add on, but it's in the back of our instructor brains	Participants reflect on project and make connections to mathematical practices. They could do this earlier on, too.	
Closing (9:50-9:55 min)	Ali & Corey Whole group. Capture on their note-catcher: next steps towards putting students as leaders in own learning. Participants share take-aways and next steps Katie- Jon Give time for master-class debrief/ feedback forms	Ali: prompts participants to capture take-aways/ implications. Corey: final words and thank you. Prompts Jon & Katie to do surveys.	

Class Description:
At The Odyssey School, we ask, "How can we inspire students to take hold of their learning? How can we support them to know where they are and to move forward?" As teachers of middle school mathematics it is difficult to insure that ALL students are getting to the target, while keeping them engaged and at the forefront of their own learning. In striving to answer these questions, we have discovered the rich instructional tools of the Habit of Inquiry and Math Menus. Participants will analyze student work to understand these tools and how they promote student independence.

Summary/ Purpose of the Master Class
The topic and how this class illustrates the conference theme, <mark>"Independence: Preparing Leaders of Their Own Learning".</mark>

At The Odyssey School, we ask ourselves, "How can we inspire students to take hold of their learning? How can we support them to know where they are and to move forward?" And, as teachers of mathematics it can be difficult to insure that ALL students are getting to the required outcome, while keeping them engaged and at the forefront of their own learning. In striving to answer these questions for our math department, we have discovered the rich instructional tools of the Habit of Inquiry and Math Menus.

In this master class, participants will have a window into how Corey and Ali supported students to meet middle school math standards while encouraging mathematicians to take an active role in their learning. At the center of this work is inquiry, which at Odyssey is one of our foundational "habits". In narrowing in on inquiry, students developed and used strategies that supported them to dive deep into complex problems, ask questions to help them stay focused and refine their problem-solving strategies.

While actively using inquiry strategies, students in Ali and Corey's classes also use math menus to choose from a selection of math experiences (mini-lessons, skill practice, fluency, etc) to design a pathway that they use to get to a target. Participants will see evidence of how students used a math menu to assess their level of understanding of a target and to move forward.

This workshop is appropriate for participants with varied degrees of experience in EL. Participants will use a math menu and gain experience with inquiry strategies as they uncover steps students took to get to a final product in Ali's 6th grade math and Corey's 7th & 8th grade classes. This workshop is designed to share these tools in a way that allows participants to take what will best drive their instruction to support student independence and ownership of learning.

Inquiry: I can use the inquiry process to investigate a topic or problem.	- Generates relevant questions that drive me to understand a topic/problem more deeply - Makes use of quality resources that help answer questions - Gathers relevant facts and information - Analyzes facts and information to help make sense of the topic/problem - Synthesizes information to form a deeper understanding, conclusion or solution based on the close study

To take with us:
- ❑ ~~Climer Cards (2 sets - photocopy 10 extras)~~
- ❑ ~~Dongles~~
- ❑ ~~Copies~~

- ❏ ~~Buddha Bell~~

Sunday AM list:
- ❏ test tech set-up
- ❏ get targets up on walls (color-coded)
- ❏ put climers on tables
- ❏ get all docs ready to pass out

Thursday/ Friday list:
- ● link in the rest of the videos to menu & presentation
- ● ~~give tasks to Katie and Jon.~~
- ● hard copies to take with us:
    - ○ ~~blank student menu (LT C Linear Equations)~~
    - ○ ~~participant menu~~
    - ○ ~~participant note-catcher~~
    - ○ individual mini lesson materials
- ● check out Grapple & make our predictions of inferences/flow (do we want a blank slide, so that Katie & Jon could add to it during the grapple) (Ali & Corey)
- ● Make sure everything in Menu is in Participant Folder- Ali
- ● ~~make all links- Ali~~
- ● Change Participant Menu to View only (prompt them to make copy??)
- ● ~~test all links- Ali~~
- ● test power point- Corey (what do I test? do I still need all the video links in last slide?)
- ● Do a final clean up of folders that are shared
- ● Upload to EL Commons