

Amazing Mazes

Materials and Teaching Checklist

Lesson Name: Introduction to Mazes
 Date to be taught: _3/5_ _2013_____

“I Can” Skills:

Last Time	This Time	Next time
None (1 st lesson)	Describe main characteristics of mazes	Identify maze complexities

Before the Lesson:

Copies to Make	Materials to Bring	Visuals to Make
	<ul style="list-style-type: none"> - - Projector with speakers - Internet connectivity 	

During the Lesson:

Section	Time (min)	I Say / Do	They Say / Do
Hook	15	<ul style="list-style-type: none"> - Introduce ourselves: Mr. B, and Mr. M <ul style="list-style-type: none"> o Company, work/engineering, etc. - Ask the kids to introduce themselves <ul style="list-style-type: none"> o Name o Grade o Like/dislike Math o Like/dislike computers o What doing on computer <ul style="list-style-type: none"> ▪ E.g. Facebook, games 	<ul style="list-style-type: none"> - Introduce themselves
Mini Lesson	5	<ul style="list-style-type: none"> - Ask kids about experiences with mazes <ul style="list-style-type: none"> o In games/computers o In life (gardens, parks) o In movies 	<ul style="list-style-type: none"> - Students describe experiences
Activity 1	15	<ul style="list-style-type: none"> - Watch Google Earth movie <ul style="list-style-type: none"> o http://www.youtube.com/watch?v=nKswNWNwBS0 o Stop before it shows path on 1:30: Hatfield Park o Ask kids to walk 1:57 (Somerlyton Hall) o Ask kids to walk 2:04 (de Uithof) 	<ul style="list-style-type: none"> - Volunteer walks Hatfield Park - Another volunteer walks Somerlyton Hall - Another volunteer walks de Uithof

Activity 2	15	<ul style="list-style-type: none"> - Watch Minecraft maze <ul style="list-style-type: none"> o http://www.youtube.com/watch?v=ZQOpNxkj5c&feature=player_embedded - Ask kids what makes mazes easy or difficult to solve? <ul style="list-style-type: none"> o Ask kids to identify reasons/characteristics o What's the difference between the maze experience in Google Earth and Minecraft? o Explain "bird's eye" view vs. "inside maze" view 	- Kids answer
Activity 3	15	<p>If we have time:</p> <p>Start introduction to maze building</p> <ul style="list-style-type: none"> • Run the maze builder in NetLogo (maze-maker-3.nlogo) and analyze some characteristics <ul style="list-style-type: none"> o Number of turns ("curviness") o Number of junctions o Number of possible solutions 	Ask students to identify characteristics
Exit Tix		Preview of some ideas for building mazes	Students brainstorm on ways and advantages/disadvantages
Dismiss		<p>Remind students of our goals:</p> <p>Build mazes</p> <p>Create maze walkers</p> <p>Teach maze walkers to "solve" (walk) the mazes effectively</p>	

Thumbnails lesson timeline:

- Introductions - instructors
- Introductions – students: name, grade, like computers? Why? Like math? Why?
- Kids – experiences/stories with mazes?
- Video – Google Earth
 - “solve mazes” on board
 - Bird’s eye view
- Video - Minecraft
 - Inside view
 - Maze complexity/difficulty
- If we have time
 - NetLogo MazeMaker – maze complexity, characteristics
 - Path width, gap, curviness