

Geogebra and the Standards for Mathematical Practice

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Overview

- Geogebra Profile
- Standards for Mathematical Practice
- Geogebra Worksheets
- Sample Worksheets



Standards for Mathematical Practices

1. Make sense of problems & persevere in solving them
2. Reason abstractly & quantitatively
3. Construct viable arguments & critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for & make use of structure
8. Look for & express regularity in repeated reasoning



Standards for Mathematical Practices

- [NCTM Look Fors](#)
 - Student and Teacher perspective
 - Practices are grouped into pairs
- [Park City Mathematics Institute](#)
 - [Task and Teacher perspective](#)
 - Needs Improvement, Emerging, Proficient, Exemplary classifications
- [Math Leadership](#)
 - [Student perspective](#)
 - Initial, Intermediate, Advanced



Using questions to foster SMP

For each SMP, there is a set of [questions](#).

Who is asking these questions?

What is the purpose of these questions?

How do we modify these questions for use in Geogebra Worksheets?



Geogebra

- GeoGebra is free mathematics software for learning and teaching
- GeoGebra includes interactive graphics, algebra and spreadsheet features
- GeoGebra is for all learners and teachers, from elementary school to university level
- GeoGebra creators and users provide free learning and teaching materials and tools to create your own
- GeoGebra is open platform (will run on Mac, Windows, Unix, online from browser, tablet, iPad)



Geogebra Worksheet

- Sign-in

- <https://www.geogebra.org/>

- Tutorial

- https://wiki.geogebra.org/en/Tutorial:Creating_Dynamic_Worksheets



Examples

- Examine the worksheet.
 - Which SMP are fostered by the worksheet?
 - What modifications would you make to the worksheet?
 - What other questions could you add? Why?
- Special Angle Pairs
 - <https://www.geogebra.org/m/WUrVRz3j>
- Discriminant
 - <https://www.geogebra.org/m/fbXdQDjb>



Examples

Three Part (Book)

- Vertical Angles: Quick (Numberless) Investigation
 - <https://www.geogebra.org/m/TY7ex9B9>
- Vertical Angles: Quick Investigation
 - <https://www.geogebra.org/m/bjq4jesh>
- Vertical Angles: Quick Discovery
 - <https://www.geogebra.org/m/n2g9WDPh>

Which SMP are fostered by the task? How?



Questions, Comments, Concerns...



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