Introducing Web Sketchpad:
A New Model for Creating and Exploring Dynamic Mathematics
Session 299, Virtual Annual Meeting of NCTM, April 2021

Scott Steketee	Daniel Scher	Karen Hollebrands
21st Century Partnership for STEM Education	McGraw-Hill Education	North Carolina State University
stek@geometricfunctions.org	Daniel.scher@mhe.com	kfholleb@ncsu.edu

What is Web Sketchpad?

Web Sketchpad (WSP) is a successor to The Geometer's Sketchpad (GSP), which for years set the standard for dynamic math-education software. With Web Sketchpad, you can:

- assign construction problems for your students to solve,
- collect student work and display it for class discussion,
- create a math micro-world for your students to explore,
- convert any GSP file into a web page for your school site, your blog, etc.
- use sketches from online resources like geometricfunctions.org and sineofthetimes.org.

What makes it unique?

WSP was designed as a simplified alternative to complex, hard-to-use software. It has:

- no menus,
- only two dialog boxes (a calculator and a number pad),
- self-documenting tools (a student taps a tool icon to see what the tool produces),
- tools that can be easily tailored for a specific student task,
- strong support for connecting functions in algebra and transformations in geometry, and
- easy-to-use widgets students can use to change objects' labels, styles, tracing, and so forth.

What will you cover in this session?

We didn't design this "session" as a show-and-tell presentation "covering" certain topics, but rather as a create-and-experiment workshop to allow you to explore a variety of structured tasks that exploit WSP's capabilities and ease of use. We'll frequently ask you to pause the video, go to the workshop website (https://geometricfunctions.org/fc/present/nctm-apr-2021/), use WSP to explore an interesting mathematical task, and then restart the video. Along the way we'll encourage you to post comments and questions (and get feedback and answers from us) on the workshop's blog page: http://sineofthetimes.org/nctm-2021-wsp-workshop.

OK, so what mathematics will I experience in this workshop?

- In the segment 1 task you'll explore and describe mathematical connections between points. (No spoiler here; you'll have to do your best to figure out how these points really work!)
- In the segment 2 and 3 tasks, you'll use the provided tools and figure out how to construct some important geometric objects.
- In segment 4, you'll construct a Dynagraph, and then use Dynagraphs to reveal the hidden motion embedded in Cartesian graphs (connecting geometry and algebra along the way).
- In the segment 5 tasks, you'll use transformations to show elegant proofs, to superpose triangles, and to prove the SSS Theorem.
- In segments 6, 7, and 8 you'll learn about ways in which WSP can support you and your students, and you'll get links to a number of useful WSP resources.

Join the Introducing Web Sketchpad Roundtable at 12 noon on April 29: https://nctm21vam.showcare.io/roundtables/