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Class Explorations in Space: From the Blackboard and History to the Outdoors and Future ELIZABETH CAVICCHI, Edgerton Center, MIT — Our everyday activities occur so seamlessly in the space around us as to leave us unawares of space, its properties, and our use of it. What might we notice, wonder about and learn through interacting with space exploratively? My seminar class took on that question as an opening for personal and group experiences during this semester. In the process, they observe space locally and in the sky, read historical works of science involving space, and invent and construct forms in space. All these actions arise responsively, as we respond to: physical materials and space; historical resources; our seminar participants, and future learners. Checks, revisions and further developments – on our findings, geometrical constructions, shared or personal inferences—come about observationally and collaboratively. I teach this seminar as an expression of the research pedagogy of critical exploration, developed by Eleanor Duckworth from the work of Jean Piaget, Bärbel Inhelder and the Elementary Science Study. This practice applies the quest for understanding of a researcher to spontaneous interactions evolving within a classroom. The teacher supports students in satisfying and developing their curiosities, which often results in exploring the subject matter by routes that are novel to both teacher and student. As my students "mess about" with geometry, string and chalk at the blackboard, in their notebooks, and in response to propositions in Euclid's *Elements*, they continually imagine further novel venues for using geometry to explore space. Where might their explorations go in the future? I invite you to hear from them directly!

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