Title**: Preparing K-8 teachers to utilize learning progressions to teach properties of materials**

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Abstract: EKU has pioneered the use of content faculty to prepare pre-service K-8 teachers. These courses are dedicated to students in curriculum and instruction with enrollment limited to typically 24-30 students. While courses in biology, physics, and earth sciences are included, this poster describes the chemistry component. We offer two such courses, one for elementary preparation (CHE 104) and one for middle school (CHE 100). We describe here course work consistent with both the three dimensions of NGSS and KY core content for assessment in science, in which a guided-inquiry approach is used, is writing-intensive, and is attentive to both the developmental needs of children and the complex but inadequate science preparation of our students. The following are key benchmarks we have laid in developing groundwork for later work in science: Observation, measurement, use of evidence, conservation of mass, particulate nature of matter, differentiating between mixtures and compounds using simple observation, using inference to understand interactions between materials (electrical and magnetic), clearer ideas about temperature and temperature changes, the kinetic molecular model of matter, the use of simple quantitative approaches to understanding heat flow, and the communication of scientific ideas. This continues to be a work in progress, but we have also notived that even science majors have difficulties with many of these ideas that may be better clarified through these approaches.