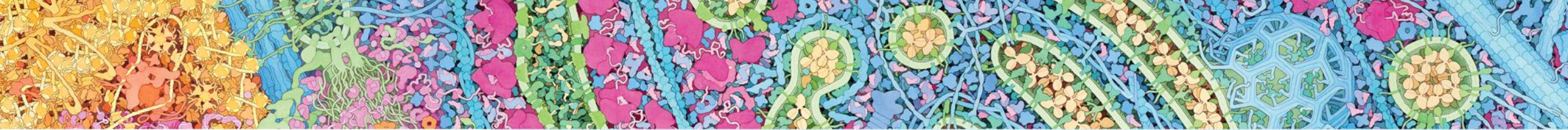




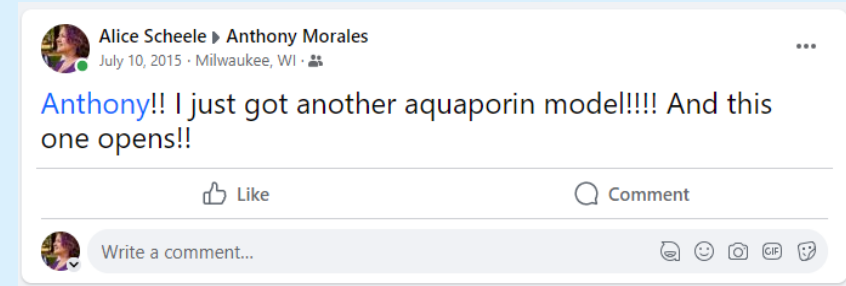
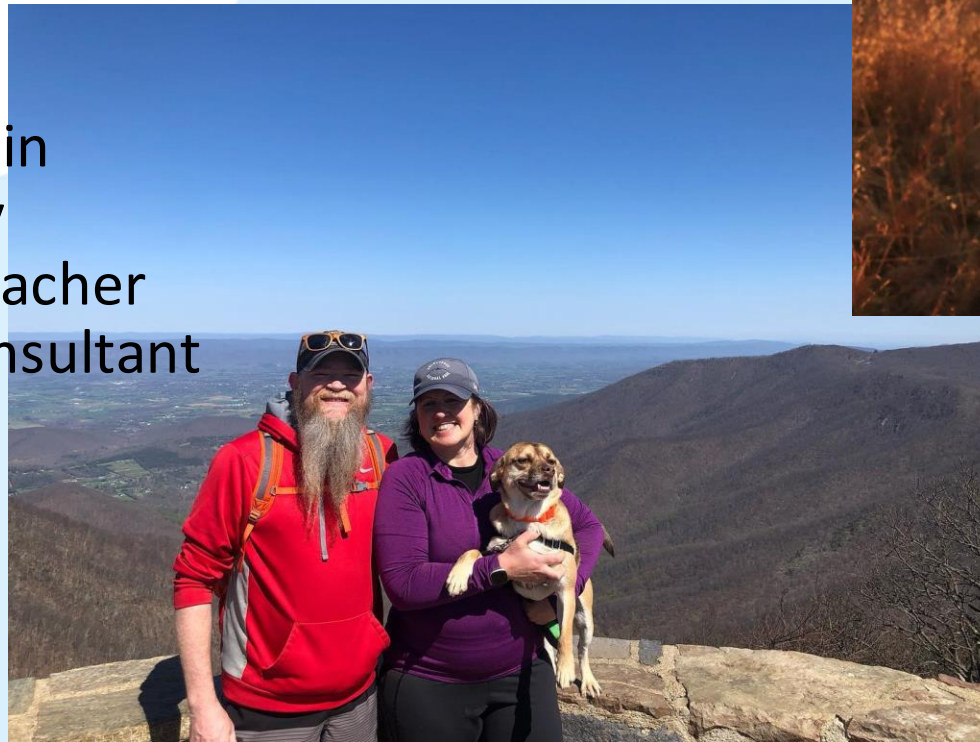
Unraveling Chromosomes through Modeling

Alice Scheele
Biology Teacher
Patrick Henry High School
Ashland, VA



Who am I?

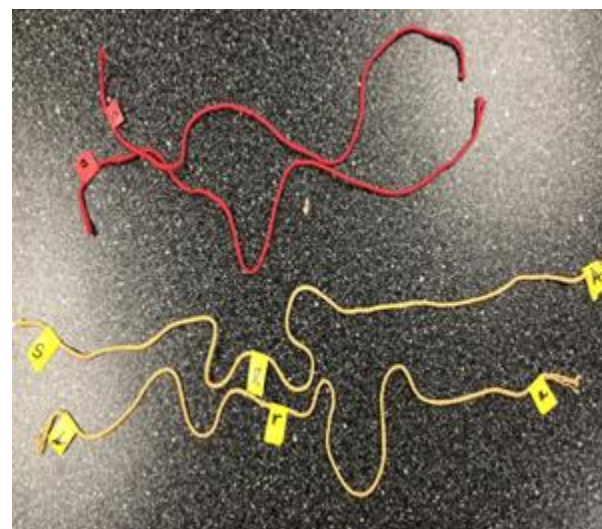
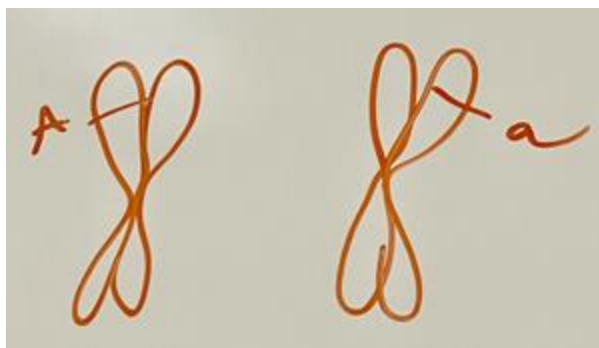
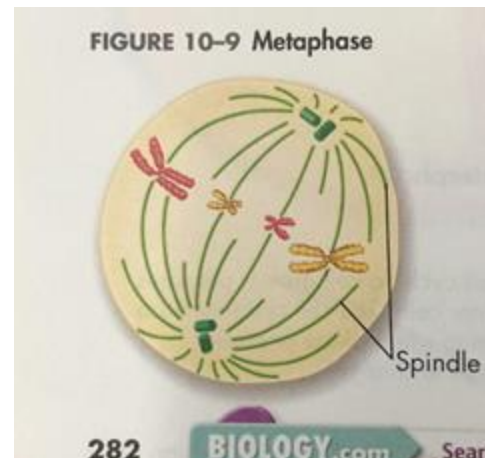
- Biology teacher in Hanover County
- 3DMD Model teacher
- AP Reader & consultant



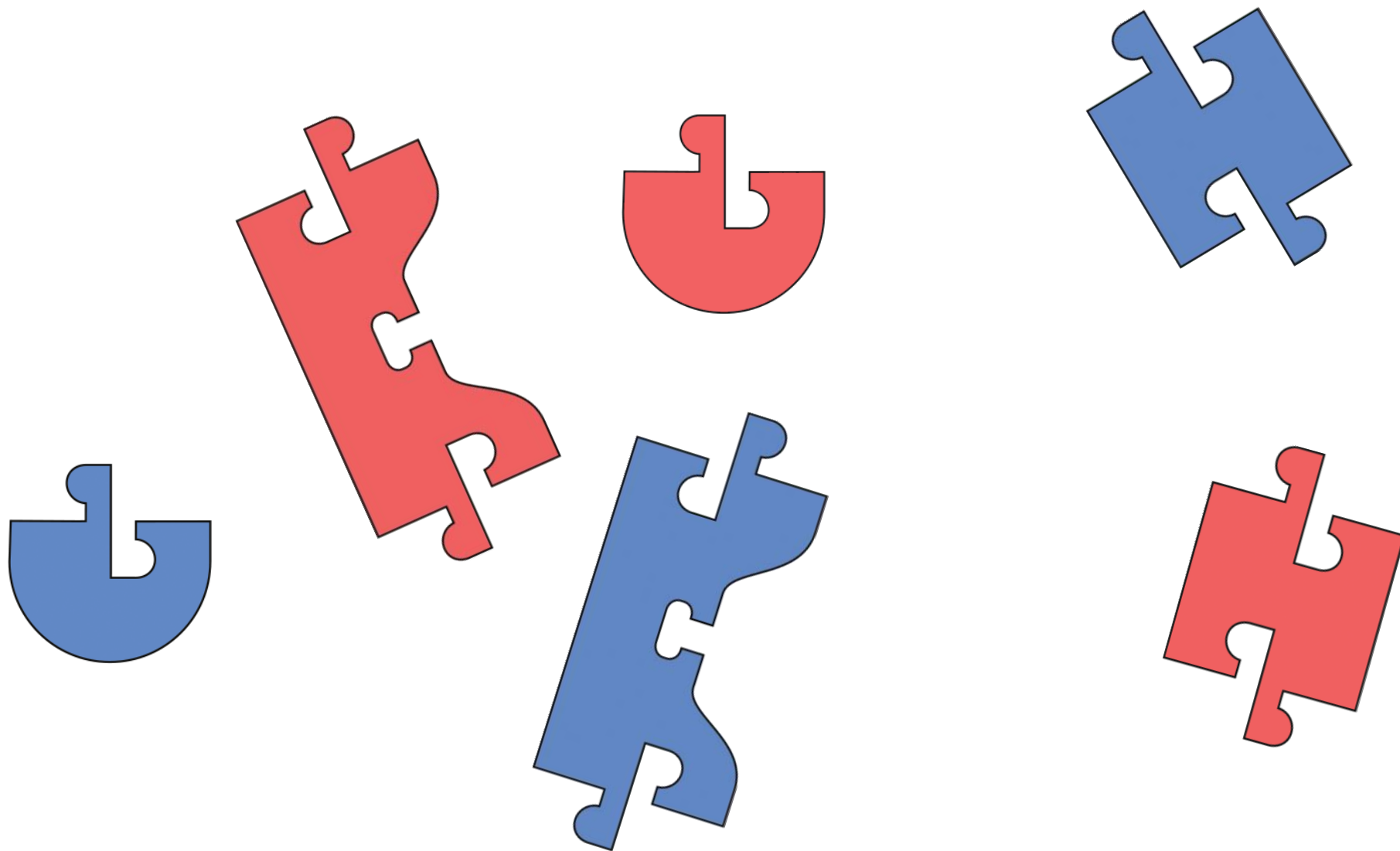
Teaching with models



What chromosome models do you use?



But what IS a chromosome? Build one!



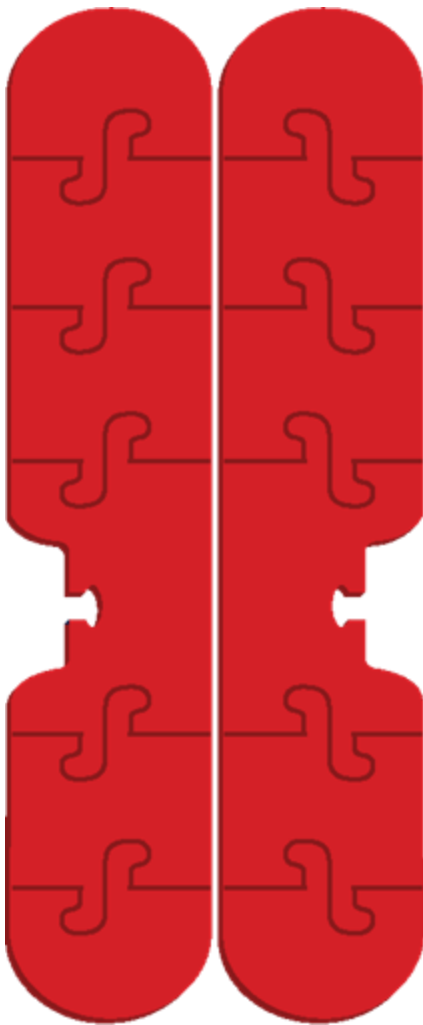
Is this a chromosome?



Or this?



Is this a chromosome?



Or this?



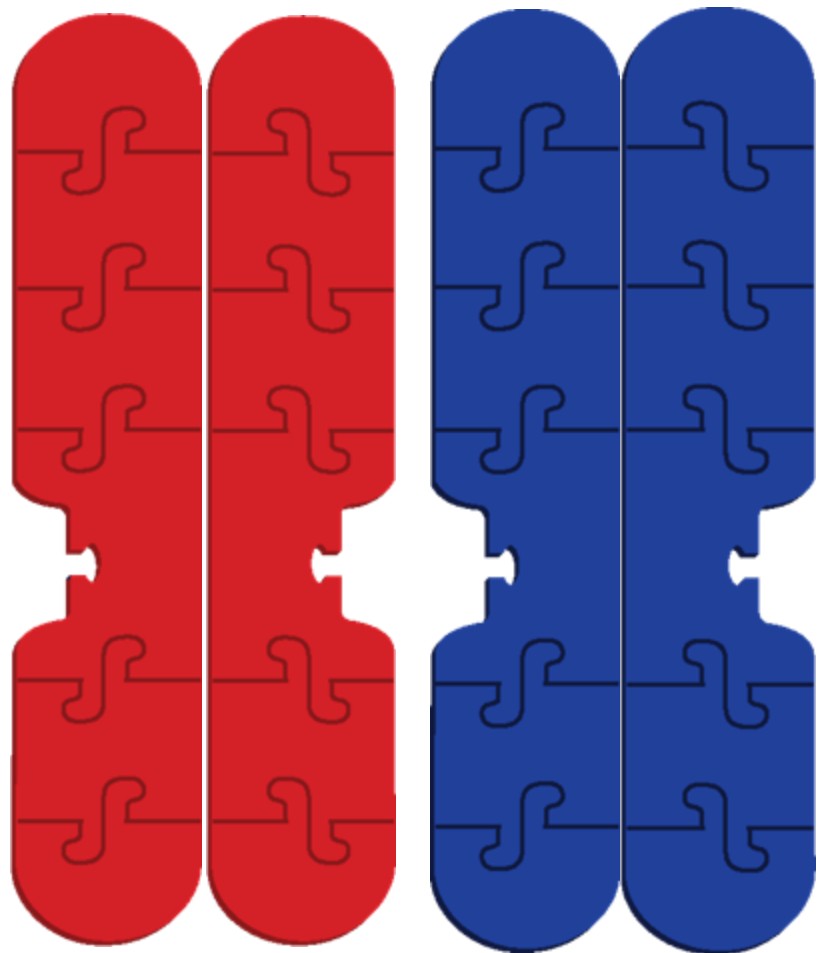
Or both?



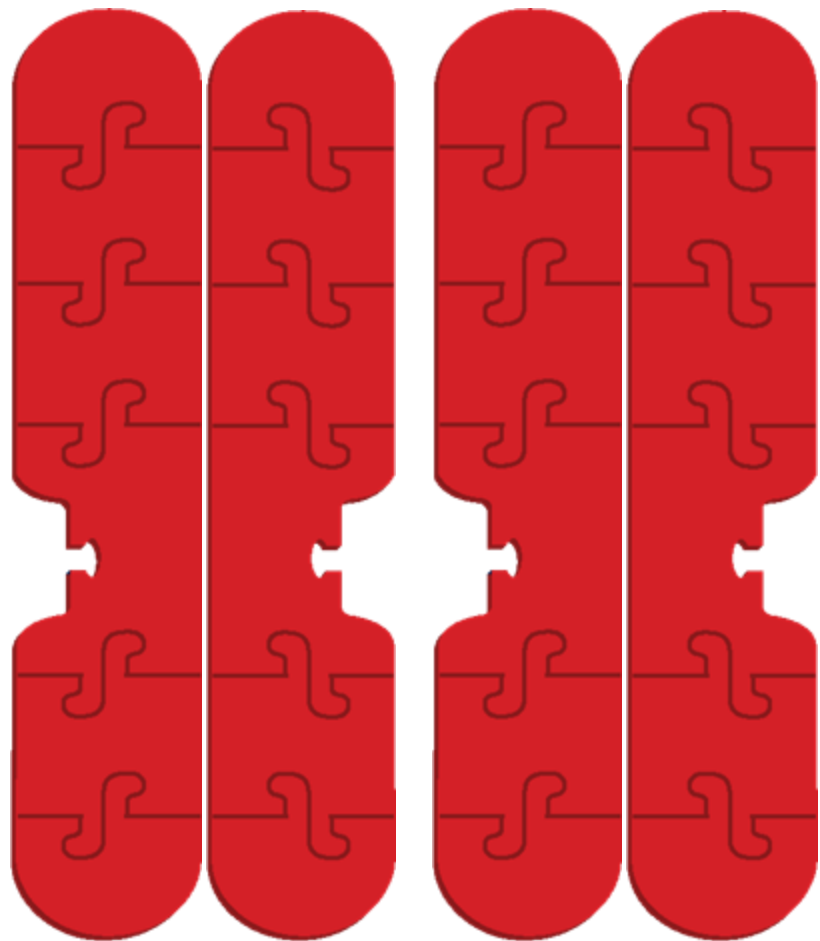
Now build a homologous pair!



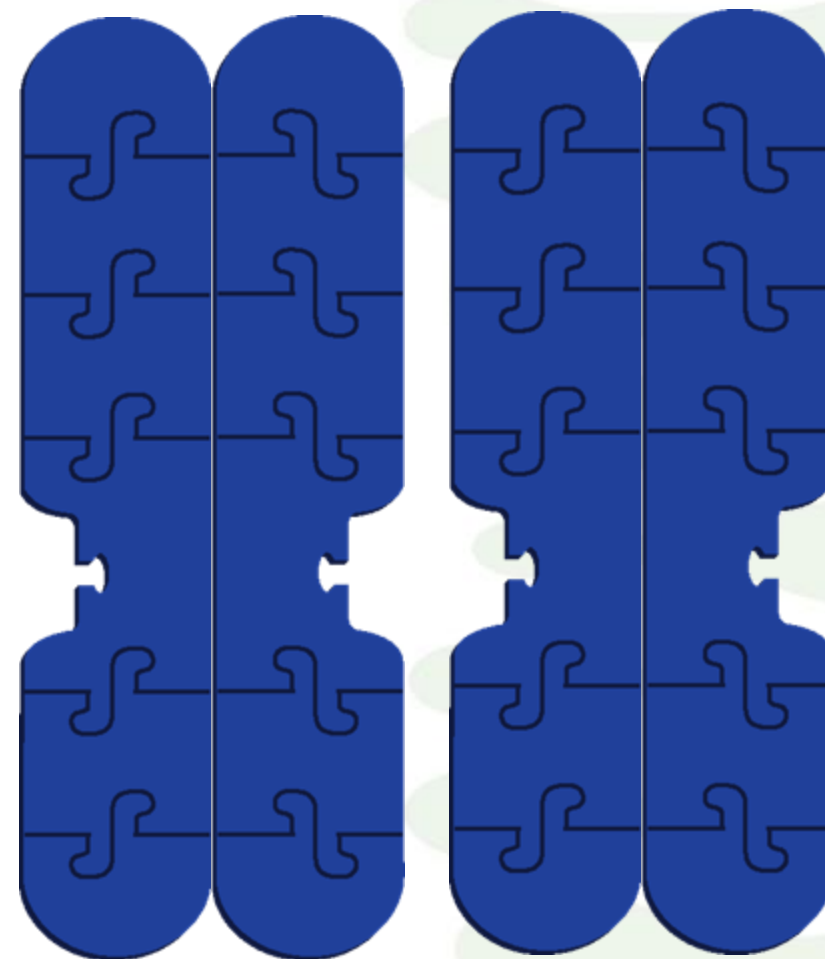
Now build a homologous pair!



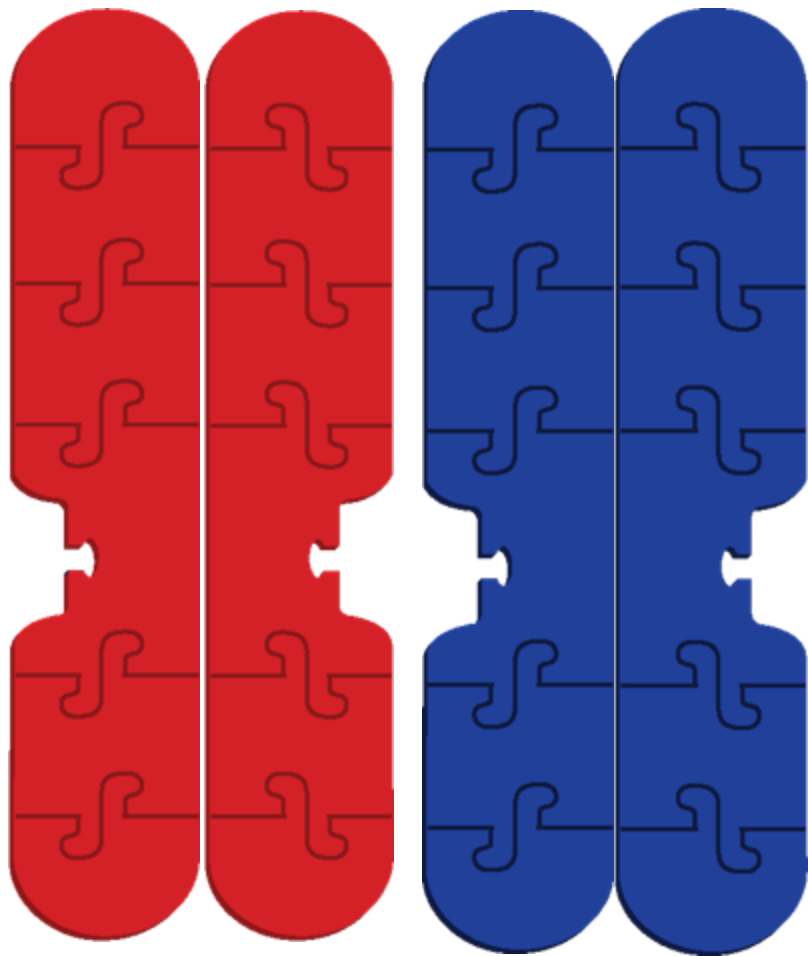
Could these be homologous pairs?



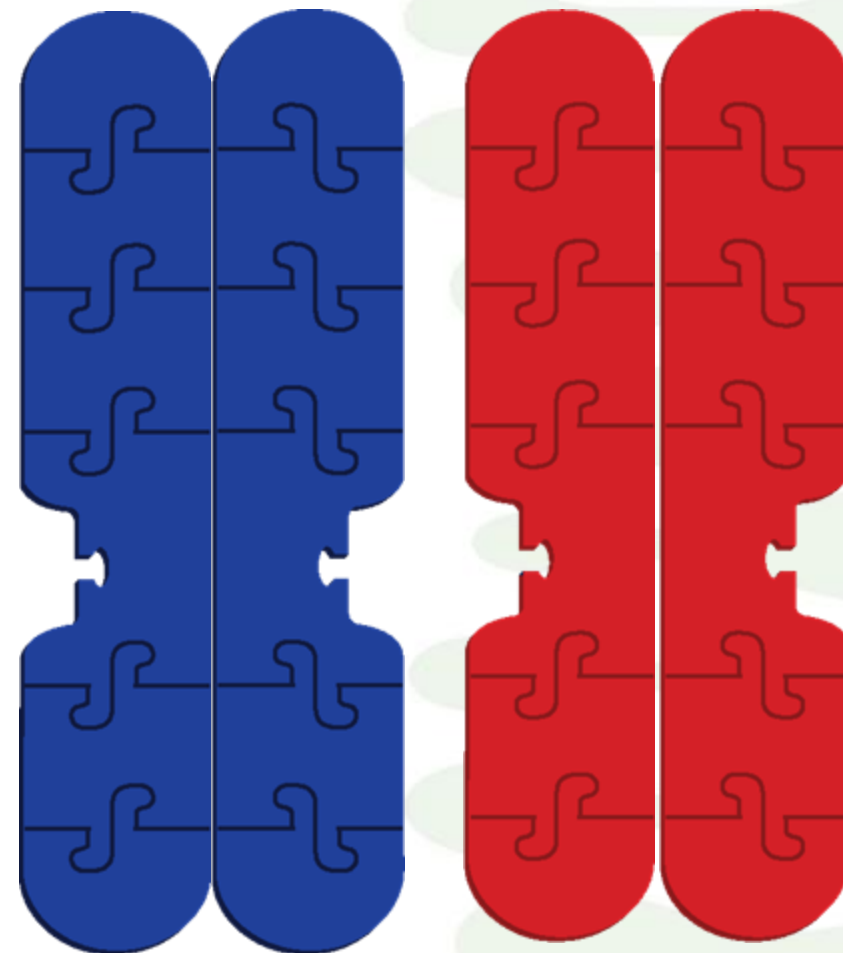
OR



Could these be homologous pairs?
What more would you need to know?



OR



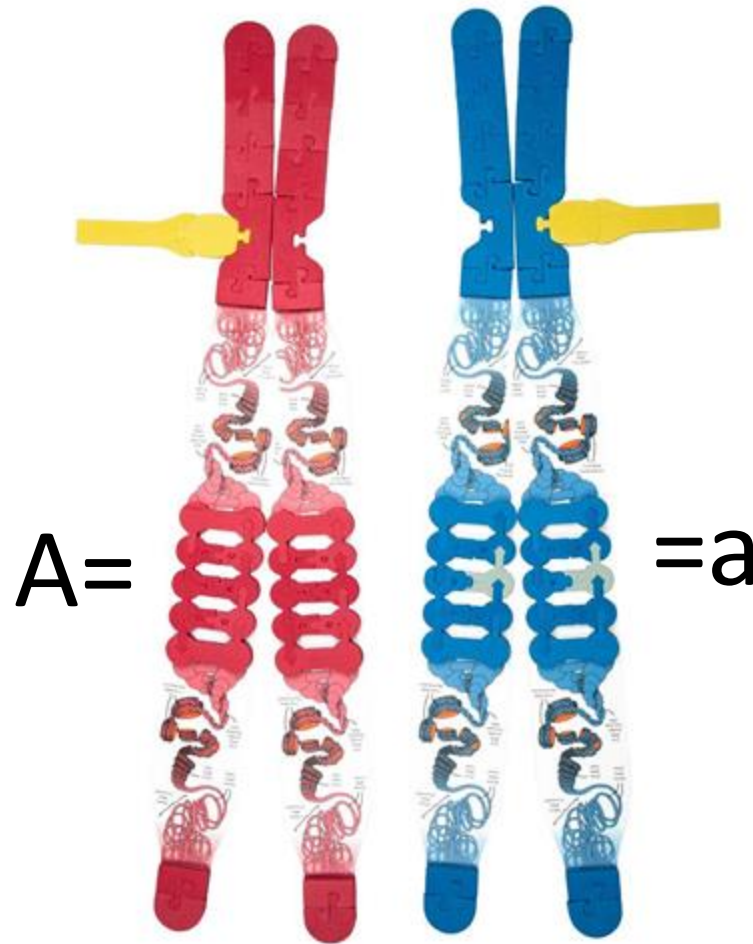
What do our students key into when we model this way?



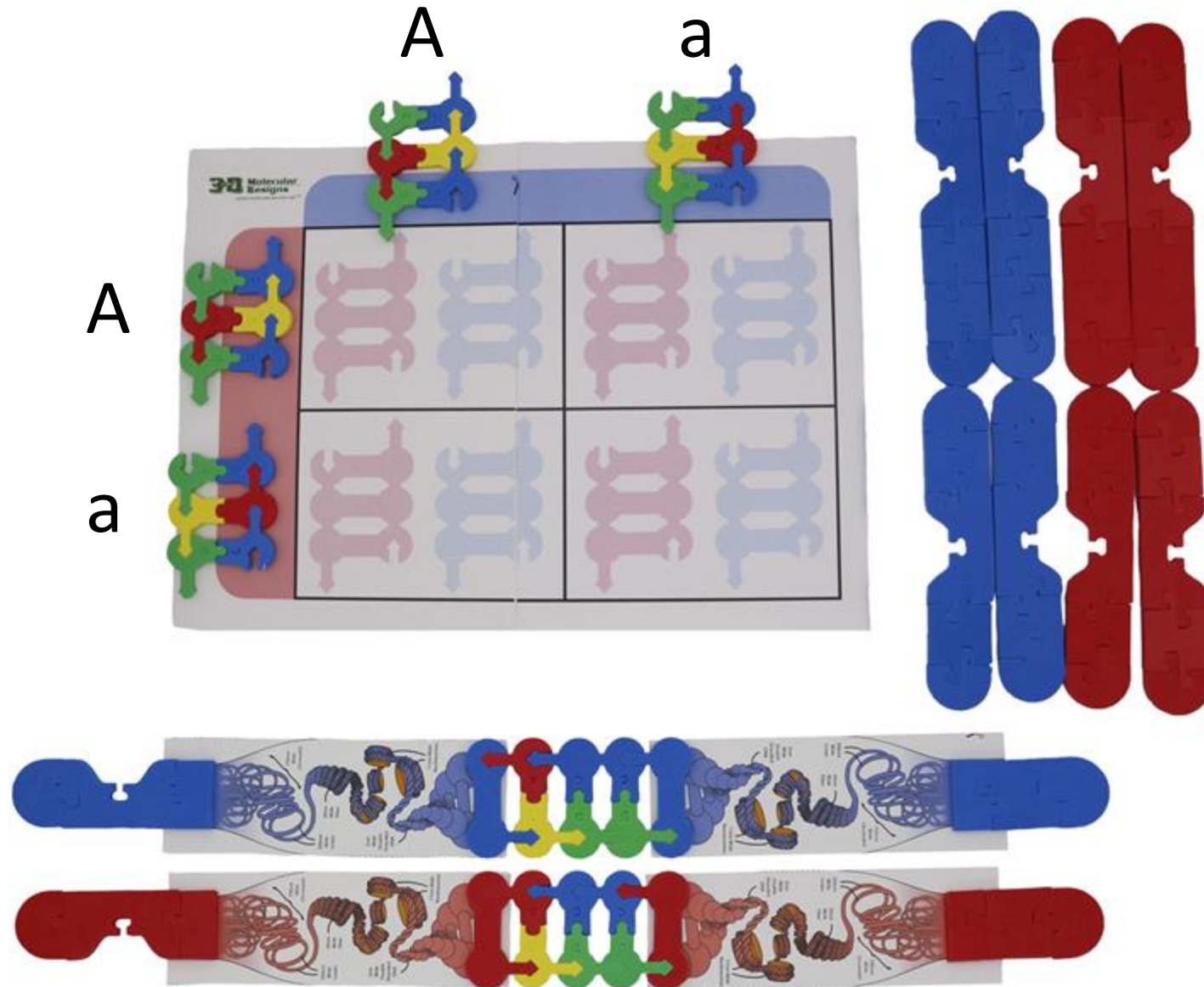
How can we improve this model so students make these connections?



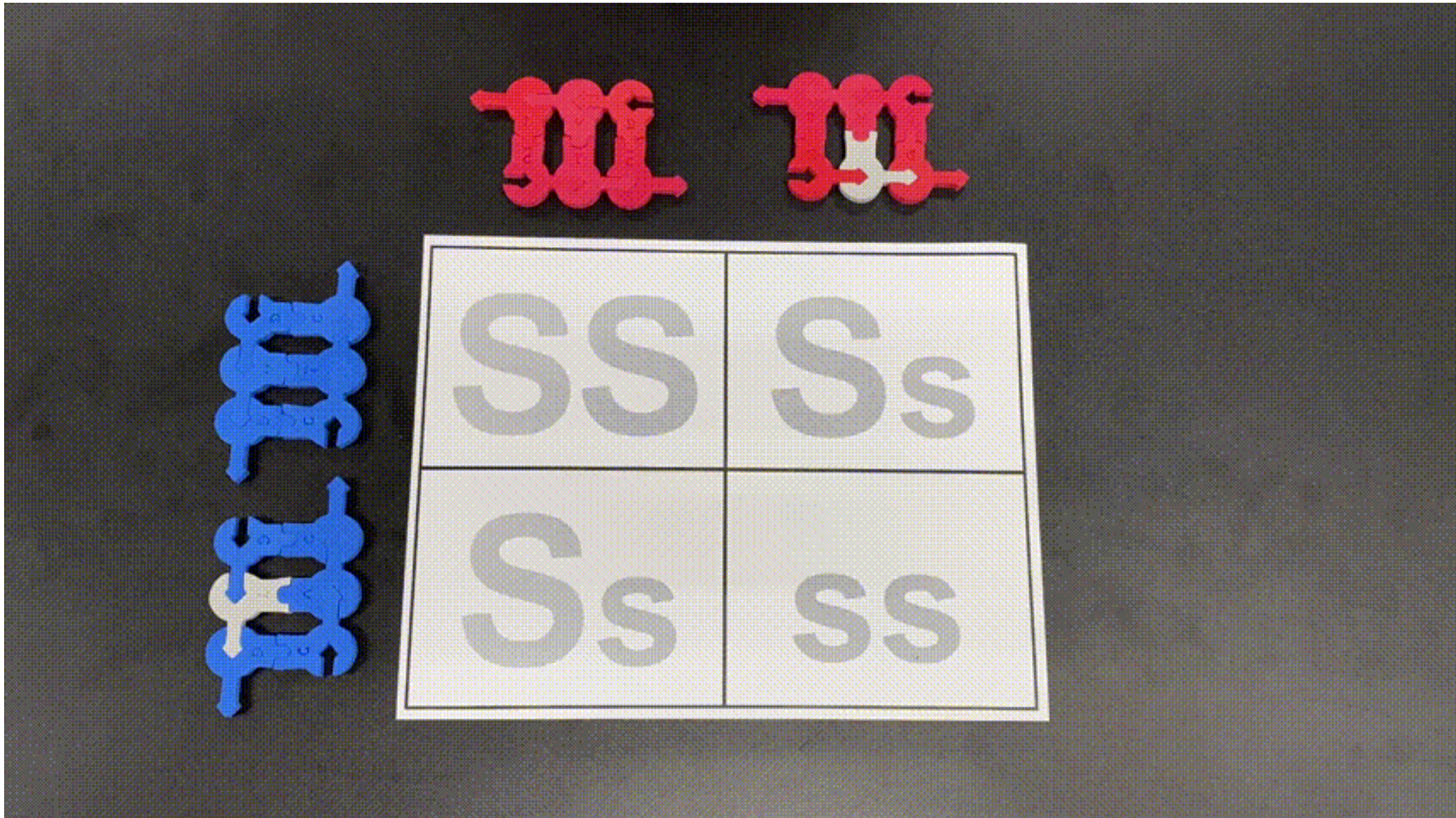
What can we do with a model like this that we could not do before?



Punnett Squares!



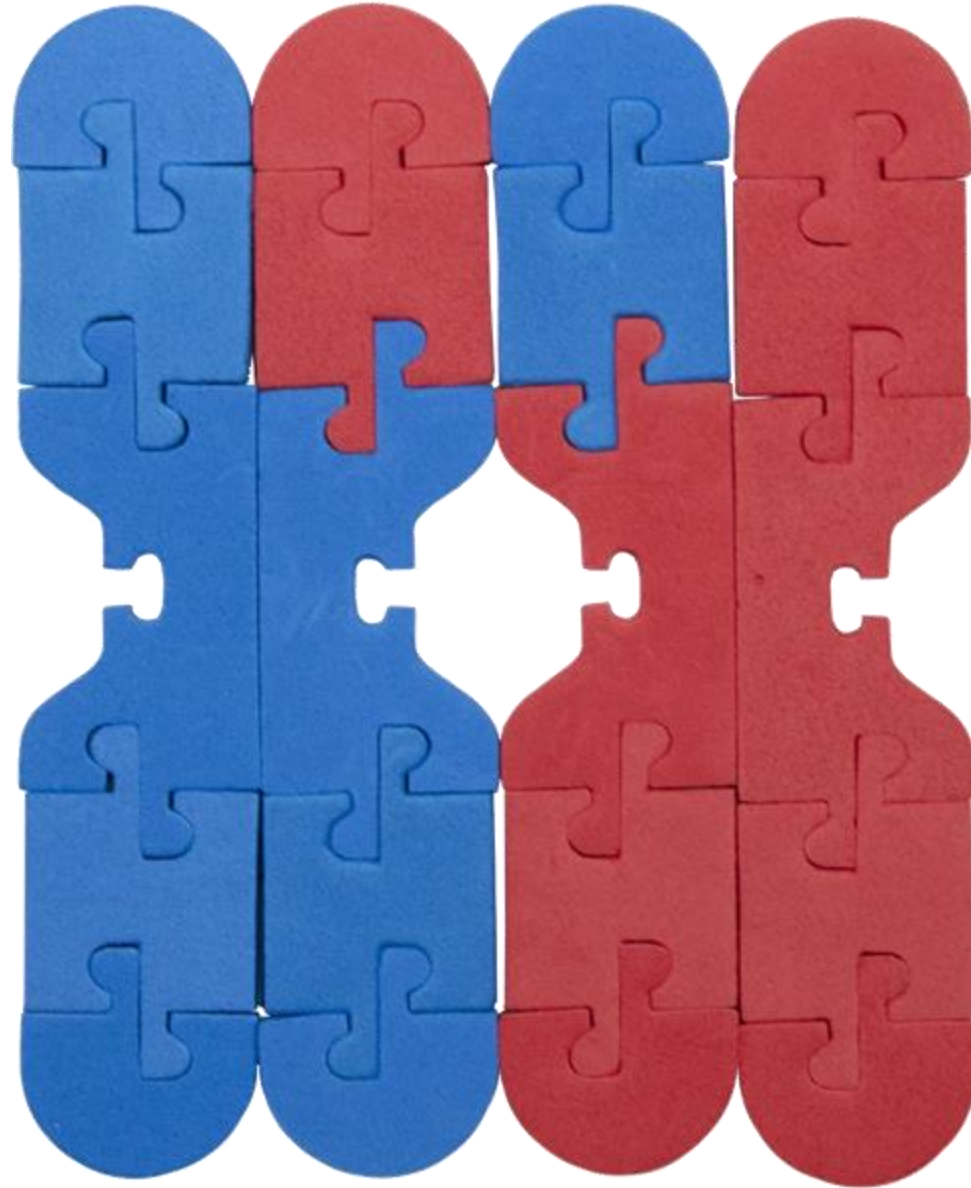
GIF of Punnett Square



And of course you can still do mitosis and meiosis...
But what is different in this picture?



Crossing over... **THIS?**



Crossing over... or **THIS?**



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OR

Session 2: August 5 – August 9

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- Learn tips and techniques from experienced teachers who have fostered student modeling, discovery, and inquiry in their classrooms
- Become part of a community of outstanding educators utilizing 3D Molecular Design's kits and models in a variety of courses
- Learn how to incorporate modeling with NGSS standards
- Leave with an introductory set of innovative materials, including a Water Kit[®], Amino Acid Starter Kit[®], Dynamic DNA Kit[®], a cellular landscape by David Goodsell, and more



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Thank you!

