

STEMVENTURES
EXPLORATION KIT

BIO ENGINEERING

SCIENCE TRACK | GRADE 5TH-8TH

SUPER MOSQUITOS GALORE, OH NO! WAIT . . . OH, YAY? USING THE POWER OF ENGINEERING, CHANGE THE WORLD WITH GENETIC MODIFICATION—FOR BETTER OR WORSE.

ACTIVITIES BREAKDOWN:

KIT OF PARTS: SOLVING BIG PROBLEMS WITH TINY TOOLKITS

LEARNERS EXPLORE THE ENGINEERING ASPECT OF SYNTHETIC BIOLOGY BY SOLVING CHALLENGES THROUGH BUILDING A MODEL CELL WITH STANDARDIZED GENETIC PARTS. MANY GENETIC COMPONENTS CAN BE USED AS PART OF THE SOLUTION TO MULTIPLE PROBLEMS. KITS OF STANDARDIZED GENETIC PARTS—LIKE "BIOBRICKS"—ARE ALREADY BEING DEVELOPED FOR REAL-WORLD APPLICATIONS.

BIO BISTRO: DECIDE WHAT'S ON THE MENU!

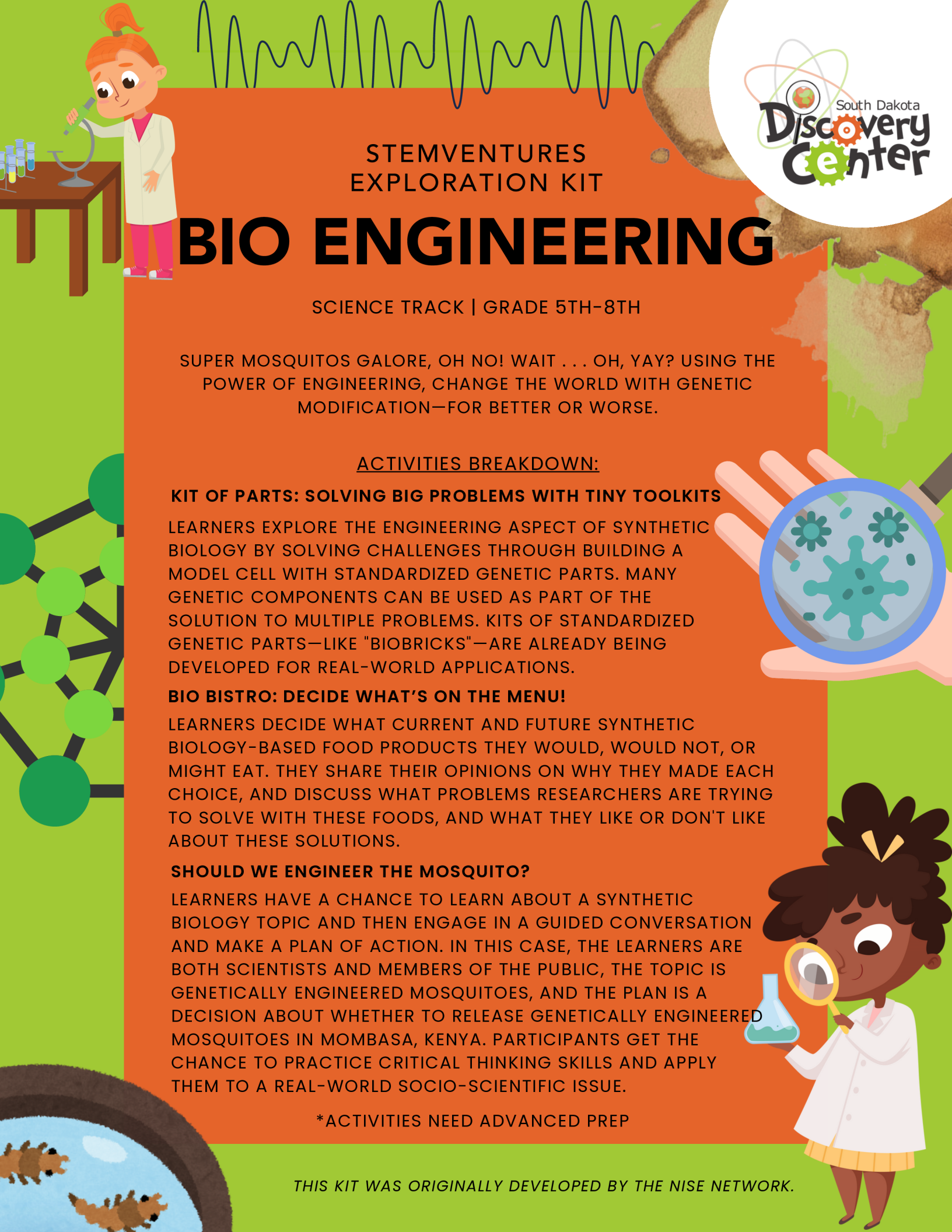
LEARNERS DECIDE WHAT CURRENT AND FUTURE SYNTHETIC BIOLOGY-BASED FOOD PRODUCTS THEY WOULD, WOULD NOT, OR MIGHT EAT. THEY SHARE THEIR OPINIONS ON WHY THEY MADE EACH CHOICE, AND DISCUSS WHAT PROBLEMS RESEARCHERS ARE TRYING TO SOLVE WITH THESE FOODS, AND WHAT THEY LIKE OR DON'T LIKE ABOUT THESE SOLUTIONS.

SHOULD WE ENGINEER THE MOSQUITO?

LEARNERS HAVE A CHANCE TO LEARN ABOUT A SYNTHETIC BIOLOGY TOPIC AND THEN ENGAGE IN A GUIDED CONVERSATION AND MAKE A PLAN OF ACTION. IN THIS CASE, THE LEARNERS ARE BOTH SCIENTISTS AND MEMBERS OF THE PUBLIC, THE TOPIC IS GENETICALLY ENGINEERED MOSQUITOES, AND THE PLAN IS A DECISION ABOUT WHETHER TO RELEASE GENETICALLY ENGINEERED MOSQUITOES IN MOMBASA, KENYA. PARTICIPANTS GET THE CHANCE TO PRACTICE CRITICAL THINKING SKILLS AND APPLY THEM TO A REAL-WORLD SOCIO-SCIENTIFIC ISSUE.

*ACTIVITIES NEED ADVANCED PREP

THIS KIT WAS ORIGINALLY DEVELOPED BY THE NISE NETWORK.



STEMVENTURES EXPLORATION KIT: BIOENGINEERING (NOTES)

KEEP YOUR STEM-ADVENTURE GOING!



TRAVELING PROGRAMS, BRING IN SCIENCE EXPLORATION!

ENHANCE EDUCATION WITH A TRAVELING STEMVENTURE PROGRAM BY BRINGING THE SDDC TO YOU! OUR STEM EDUCATORS ARE STANDING BY WITH TRAVELING STEMVENTURE PROGRAMS FOR ANYONE AND EVERYONE!

WITH PROGRAMS LIKE OUR TRAVELING JOURNEY BEYOND THE KNOWN PLANETARIUM, YOU CAN DEEP DIVE INTO HANDS-ON STEM LEARNING AND SHARE EXPERIENCES THAT LAST A LIFETIME.

JOIN US FOR A FIELD TRIP!

EXPLORE THE SDDC EXHIBIT HALL, FULL OF FUN LEARNING OPPORTUNITIES!

*Group visits and on-site STEMventure Programs can be booked year-round every Monday thru Saturday, 10:00am-5:00pm, and on Sundays from 1:00pm-5:00pm. These experiences **MUST** be booked and confirmed in advance.



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