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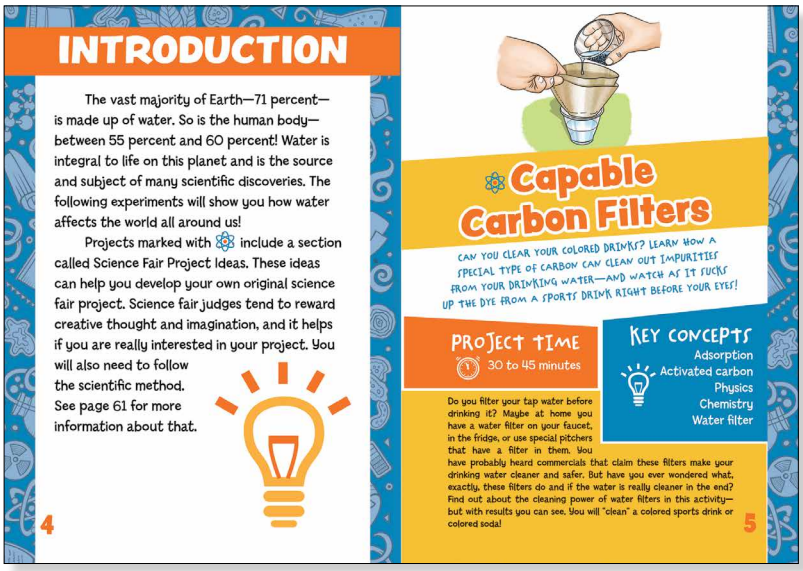

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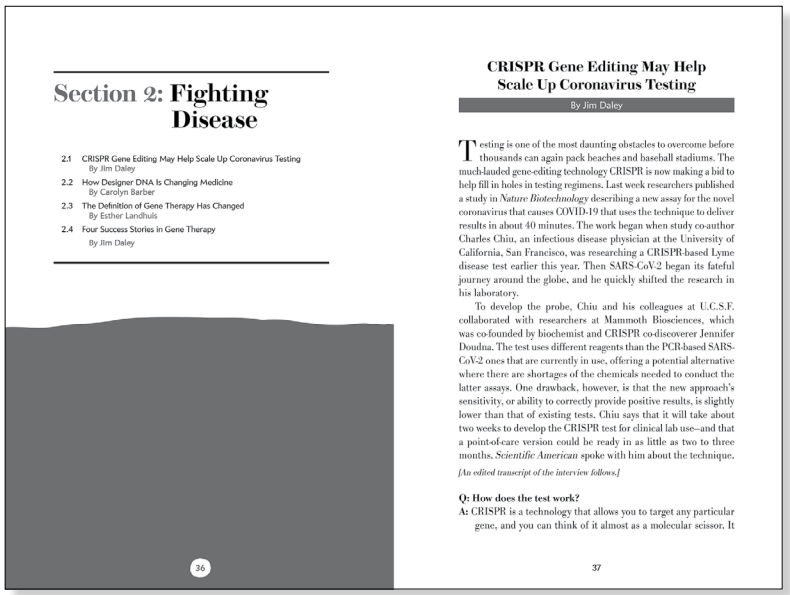
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CRISPR Gene Editing May Help Scale Up Coronavirus Testing

By Jim Daley

Testing is one of the most daunting obstacles to overcome before thousands can again pack beaches and baseball stadiums. The much-lauded gene-editing technology CRISPR is now making a bid to help fill in holes in testing regimens. Last week researchers published a study in *Nature Biotechnology* describing a new assay for the novel coronavirus that causes COVID-19 that uses the technique to deliver results in about 40 minutes. The work began when study co-author Charles Chiu, an infectious disease physician at the University of California, San Francisco, was researching a CRISPR-based Lyme disease test earlier this year. Then SARS-CoV-2 began its fateful journey around the globe, and he quickly shifted the research in his laboratory.

To develop the probe, Chiu and his colleagues at U.C.S.F. collaborated with researchers at Mammoth Biosciences, which was co-founded by biochemist and CRISPR co-discoverer Jennifer Doudna. The test uses different reagents than the PCR-based SARS-CoV-2 ones that are currently in use, offering a potential alternative where there are shortages of the chemicals needed to conduct the latter assays. One drawback, however, is that the new approach's sensitivity, or ability to correctly provide positive results, is slightly lower than that of existing tests. Chiu says that it will take about two weeks to develop the CRISPR test for clinical lab use—and that a point-of-care version could be ready in as little as two to three months. *Scientific American* spoke with him about the technique.

[An edited transcript of the interview follows.]

Q: How does the test work?
A: CRISPR is a technology that allows you to target any particular gene, and you can think of it almost as a molecular scissor. It

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Reading Level: **9–10** Interest Level: **9–12+**

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