

“XPLORATION NATURE KNOWS BEST”

SEASON IV - 2019/2020

FCC FRIENDLY EPISODE WRITE-UPS

FOURTH QUARTER

Week of September 30, 2019 through week of December 23, 2019

Week of September 30, 2019 (Episode #105)

Everything uses energy but humans are the only species destroying our planet to create it. Host Danni Washington will discover that not only do all other organisms have better means of gathering energy, but by studying their eyes, their fins, and the ways they move we can find ways to improve solar power, wind power, and even kinetic power!

Week of October 7, 2019 (Episode #106)

One of the first instances of bio-inspiration was Velcro influenced by the sticky burrs of the burdock plant. In this episode, host Danni Washington takes a fascinating and fun look at Velcro and other ways inventors have “stuck” with nature including robots that can scale walls or pick-up any object thanks to bugs and chameleons, suction cups inspired by one sucky fish, and an innovation based on the holy-grail of all adhesively-inclined animals... the gecko!

Week of October 14, 2019 (Episode #107)

Helicopters took a lot of their early inspiration from one of nature’s most efficient fliers in the dragonfly and host Danni Washington’s going to take one for a spin to see exactly how! She’ll also take a look at how this insect and the wings of owls continue to inspire helicopters and how another one of the helicopter’s early influences, the maple seed, has inspired one of the world’s coolest new unmanned aerial vehicles.

Week of October 21, 2019 (Episode #108)

While inventors have been looking toward nature as inspiration for centuries, this science is just starting to come into it’s own and was recently given a name... Biomimicry! Join Danni Washington as we visit all the new places where this science is taking hold, from schools, to zoos, to national conventions like the USA Science and Engineering Festival in Washington D.C.!

Week of October 28, 2019 (Episode #109)

To many people the thought of sharks can be scary but they’re actually a huge help to our oceans... and have inspired some awesome tech! Danni Washington will take the plunge and swim with sharks, relaying how their skin is being used to fight germs and their senses can help build better robots! And, if you’re still scared of sharks, Danni goes surfing to reveal how scientists are using bio-inspiration to develop wetsuits that should make you nearly invisible to the ocean’s top predators.

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Week of November 4, 2019 (Episode #110)

Animals in nature have other ways of communicating than you or I do and many of them are able to move collectively in packs called “swarms”. Host Danni Washington takes a look at how today’s scientists are studying this swarm behavior to make better robots that will help in our factories, to collect things on other planets, or to make better autonomous cars!

Week of November 11, 2019 (Episode #111)

Some of the world’s strongest materials are naturally made like the silk spiders use to make their webs which, pound for pound, is actually 5 times stronger than steel. In this episode, Danni Washington will look into how we’re looking toward nature to make our other things stronger... like glass, metals, and even ourselves!

Week of November 18, 2019 (Episode #112)

Drones are all the rage right now... and, thanks to nature, they’re doing things that we never imagined! Join Danni Washington as she explores aerial drones that can perch on walls, dive in and out of water, and communicate in swarms!

Week of November 25, 2019 (Episode #113)

Robots are built for all kinds of things and, these days, their inventors are looking toward nature to see how animals can help them to do the things that humans can’t! Join Danni Washington as she checks out tiny robots based on manta rays that are helping to fight heart problems, robots that are learning to run as fast as our speediest animals, and giant snake-like robots that are drawing attention to climate change!

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Week of December 2, 2019 (Episode #114)

Whether you're on a team, or just having a little fun, sports play a part in most of our lives. In this episode, host Danni Washington discovers how Mother Nature is revamping some of our favorite activities. She straps on roller skates with reinvented wheels that are inspired by how snakes and fish move. She crushes a 20-minute workout that mimics the physiology of little kids. And she sees how a basic component in plants is helping divers see more clearly underwater.

Week of December 9, 2019 (Episode #115)

Host Danni Washington goes whale watching and discovers the ways whales have inspired new inventions that help us ride bicycles and surfboards better and faster.

Week of December 16, 2019 (Episode #116)

With a little inspiration from Mother Nature, scientists are finding exciting new ways to grow and store food. Just host Danni Washington as she discovers how microscopic bacteria can create organic fertilizer. She heads out to sea to explore “3-D” ocean farming. And a “cool” solution to refrigeration is inspired by ants, elephants and kangaroos.

Week of December 23, 2019 (Episode #117)

Host Danni Washington presents the amazing world of Bio-Hybrid science, where sea slugs become robots, spinach plants prevent explosions and jellyfish could help prevent heart failure.