Get to know viNGN and learn about fiber optics!

viNGN

Fiber Freddy

Information & Activity Book

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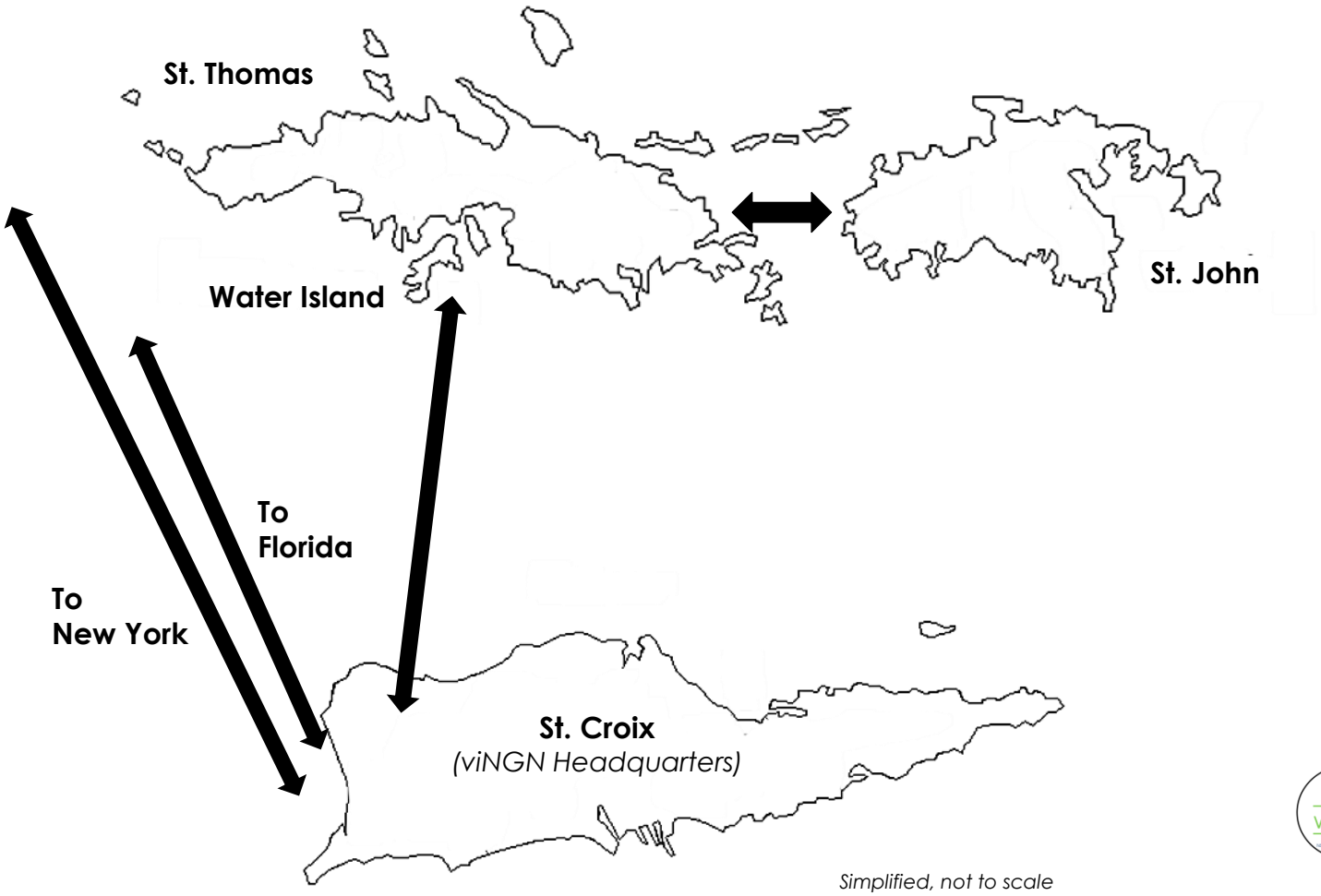
Contents

What is viNGN?

- ✓ **viNGN** is the **Virgin Islands Next Generation Network**.
- ✓ **viNGN** is a **100% fiber-optic Internet backbone** that connects all 4 of the U.S. Virgin Islands, and connects the Virgin Islands to the world via subsea cables. The Internet is sometimes called the **World Wide Web** (WWW).
- ✓ **viNGN** is unique in all of the USA: it is **100% fiber from end to end**.
- ✓ **Fiber Optics** is the **fastest** wired Internet available anywhere. It resists moisture and radio interference, and makes 5G more possible.
- ✓ **viNGN** only sells wholesale to an **ISP** (Internet Service Provider). viNGN cannot sell bandwidth to the public.



Simplified, not to scale

How it all Works

STEP 1:

viNGN Connects the VI to the World with 100% Fiber, interconnecting all of the U.S. Virgin Islands.

STEP 2:

Internet Service Provider (ISP) partners with viNGN to connect at a Fiber Access Point (FAP).

STEP 3:

Your ISP connects you to the Internet through a modem or antenna with Ethernet cable.

STEP 4:

Connect devices over Wi-Fi with your router.
Your ISP's modem may have optional router capabilities.

What is Fiber?

Fiber Optics is thin strands of glass. Light passing through fiber carries information, or data. Fiber is the fastest wired connection, transmitting near the speed of light. A single fiber is almost as thin as a human hair! Keep reading to learn the advantages of the viNGN 100% fiber-optic network, discover how the Internet works via your ISP, and lots more!

Fiber & Internet Facts

7 advantages of fiber optics:

1. Fiber transmits more data at any one time. This is referred to as "bandwidth".
2. Fiber transmits data more quickly, at nearly the speed of light, with less signal loss.
3. Fiber optics carries signal up to 25 miles, compared to less than 500 feet for copper lines.
4. Fiber resists weather, temperature changes, moisture and electromagnetic interference.
5. Fiber is slimmer, and holds up to more "pull pressure", resisting damage and breakage.
6. Fiber allows expansion and can be added to existing networks very easily.
7. Fiber is more economical long term vs. initial investment (Total Cost of Ownership, or TCO).

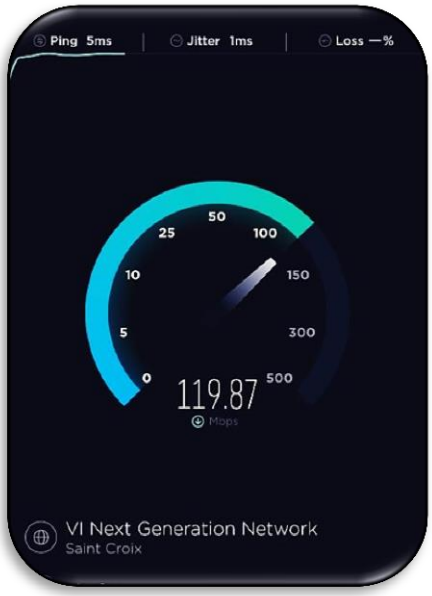
Why can't I buy Internet service from viNGN?

viNGN was established in 2010 as a **wholesale** middle mile provider of high-speed Internet transport and related network services, and can only do business with an established ISP. viNGN is committed to the continued broadband infrastructure, economic, and community development of the U.S. Virgin Islands.

What are Lit and Dark Fiber?

Lit Fiber has light passing through it, so it is ready to or is already transmitting data. Most ISPs use Lit Fiber. With Lit Fiber, the facilities and hardware are already put in place by the provider (in this case, viNGN).

Dark Fiber has no light passing through it. It is laid to avoid digging to place more fiber when extra capacity is needed. ISPs lease Dark Fiber and add their own hardware to create private networks.



What is 5G?
5G is 5th-generation cellular wireless. Fiber Optics is the gold standard for most efficient deployment and support for 5G.

What is Bandwidth?

Bandwidth is the most data that can be sent over a connection over a specific time period. It is noted as megabits per second, abbreviated as Mbps. Check your Internet speed at ***speedtest.net***.

What is an ISP?

ISP is short for Internet Service Provider. ISPs are companies that retail (sell) internet connections and related services for home or office use. ISPs sell direct to customers, while viNGN does not.

What is a modem?

A modem is the "box" that receives Internet signal from your ISP. Add your own router to share Wi-Fi or connect other devices. Some ISPs provide a modem that can also function as a router.

What is a router?

Routers connect computers and devices via Ethernet cable or wirelessly (Wi-Fi). A router is owned by you, but may be supplied by an ISP.
SECURITY TIP: Keep your network safe by changing the router administrator password. Find instructions in your manual.

Frequently-Asked Questions

Why is the Internet expensive?

While prices are not yet comparable to stateside, the value of your purchase has increased. You are now able to buy 3 or more times the bandwidth for the same prices you would have paid for most packages in 2013. This is due to the increase in the number of ISPs and market competition. As a consumer, you should search for the best available options to fit your needs and your wallet. View our partners at ***vingn.com/isp-partners***.

Why is my Internet not working?

Check your modem. If your home or office Internet ever goes down make sure it is plugged in and turned on, and the right indicator lights are showing in the proper colors. Sometimes it helps to unplug and plug in any Ethernet cables to the computer or router as well. Power-cycle the system by turning off your device(s) including printers, and turning off the modem and any connected routers, then turning them on again, one by one while waiting to see if all the indicator lights are normal, beginning with the modem, then the router, then the device(s). If this doesn't help contact your ISP to check for network issues.

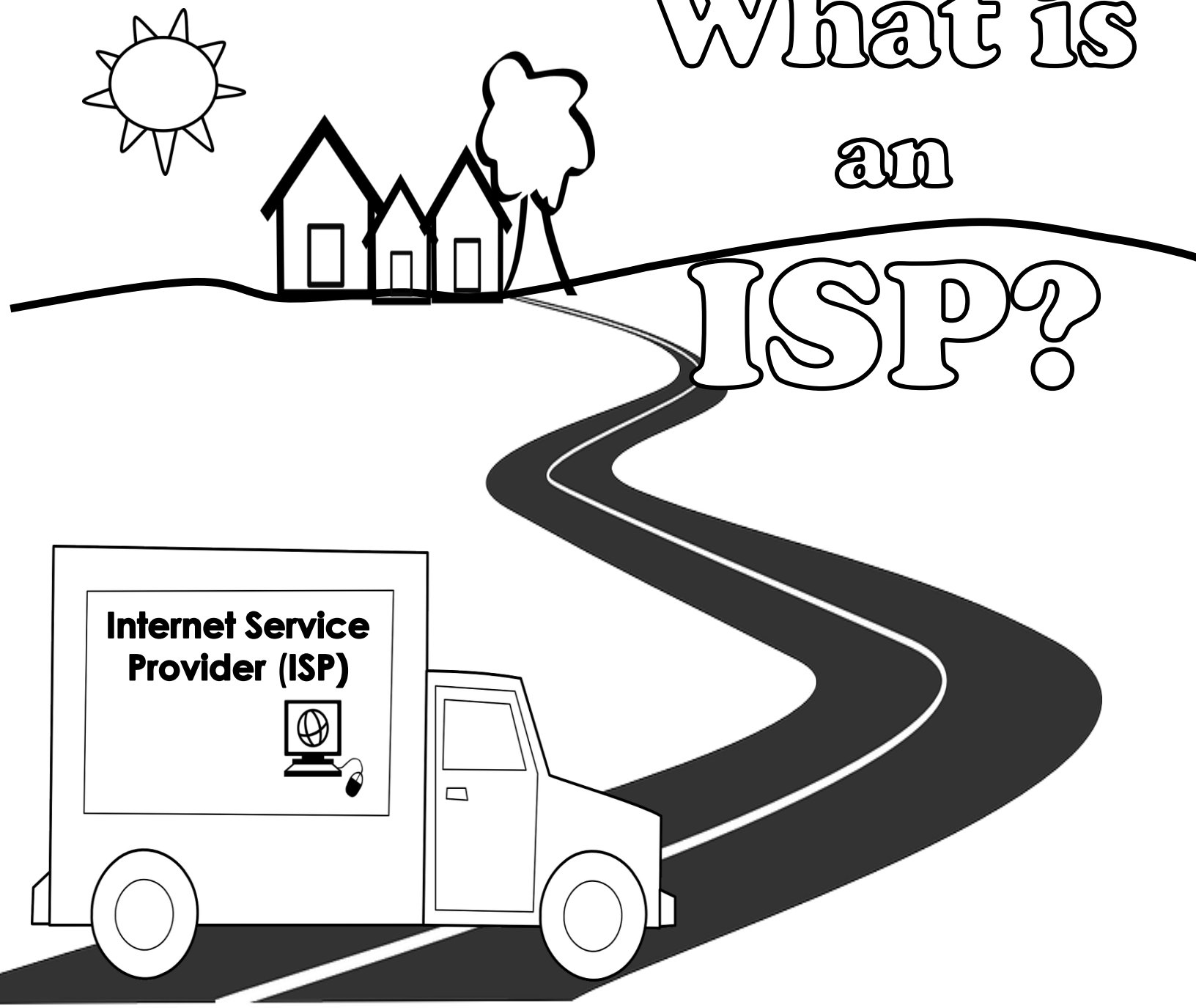
Why is my Wi-Fi not working?

If your home or office Wi-Fi ever goes down make sure your router is plugged in and turned on, and the right indicator lights are showing in the proper colors according to the manufacturer's manual. Turn the router off, wait several seconds, and turn it on again. Sometimes it helps to unplug and plug in any Ethernet cables to the router as well. Check the ISP equipment to make sure it is plugged in and turned on. If your ISP supplied a modem/router combo, troubleshoot as for a modem.

Why is my Internet slow?

viNGN is a super-fast, a 100% fiber optic network where data travels close to the speed of light. If your actual speeds do not match your ISP package, this may be due to a bad wire, a unit not designed to handle a large amount of data, outdated hardware, network congestion in your area, or a device that may be failing in your or the ISP's network. You must contact your ISP to report slow Internet speeds. If advanced troubleshooting reveals an issue between the ISP and viNGN, the ISP will contact viNGN directly. viNGN cannot assist the customer of an ISP, as viNGN does not own or manage any of the equipment between your home or office and the ISP.

What is an ISP?

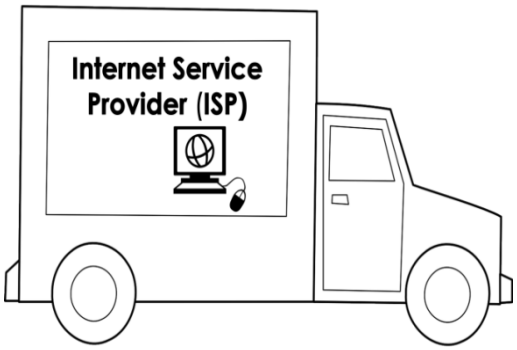


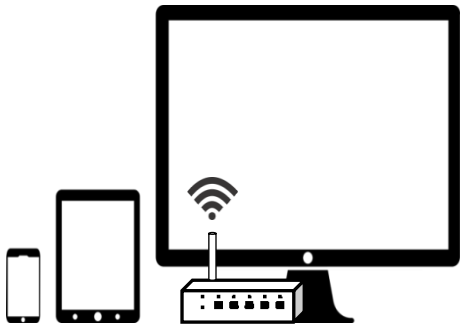
An **ISP** is an **Internet Service Provider**. ISPs sell Internet service direct to the public. viNGN sells **wholesale** (in large amounts at reduced prices) to ISPs and does not sell to the public.

What is a FAP?

Fiber Access Point. USVI Internet Service Providers (ISPs) can connect to the viNGN network at over 20 **FAPs** throughout the territory, on St. Croix, St. John, and St. Thomas. FAPs may sometimes be called **Facility Access Points**.

How ISPs work with viNGN



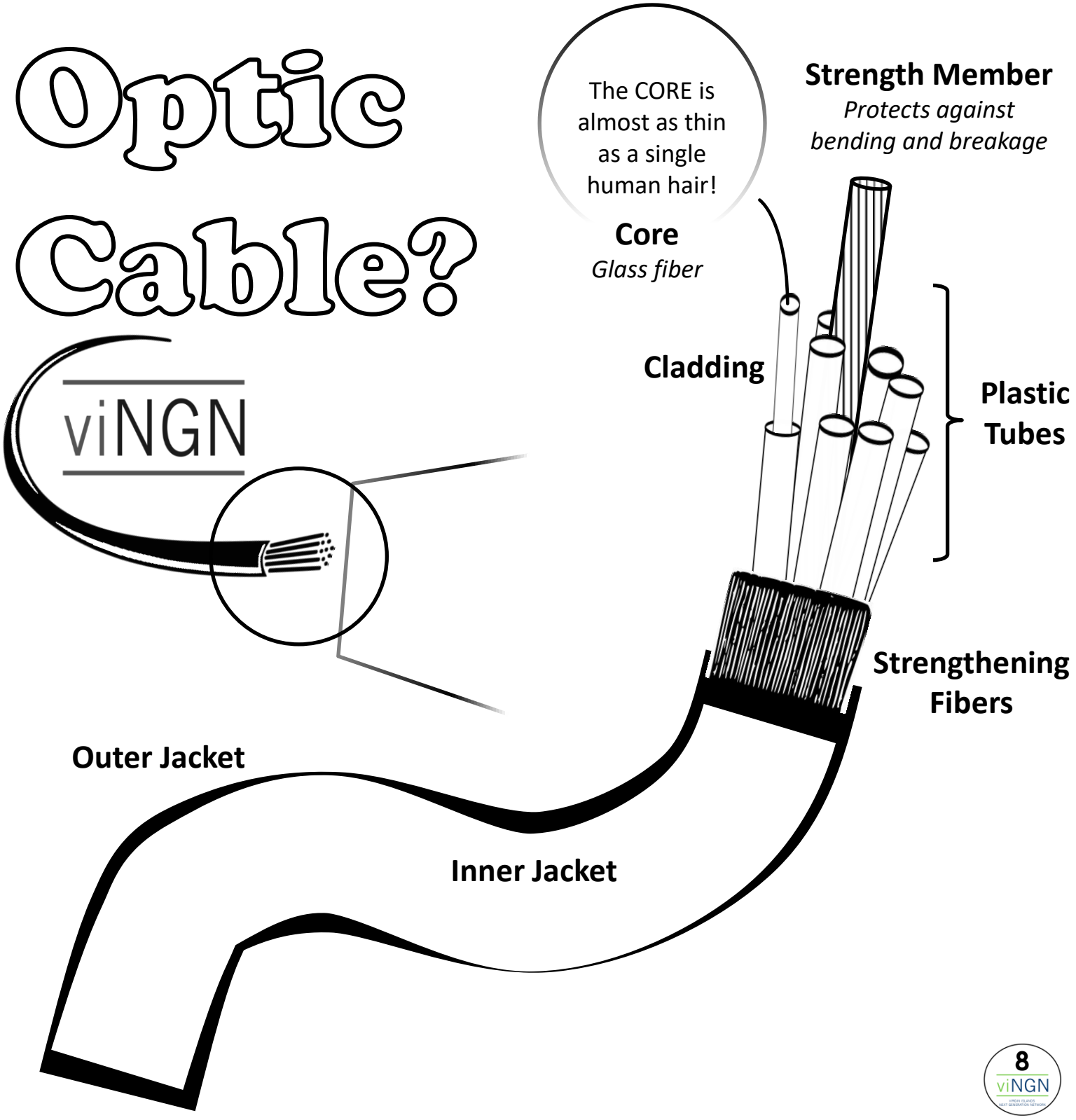


viNGN FAPs distribute 100% fiber optics throughout the US Virgin Islands via subsea cables from the mainland.

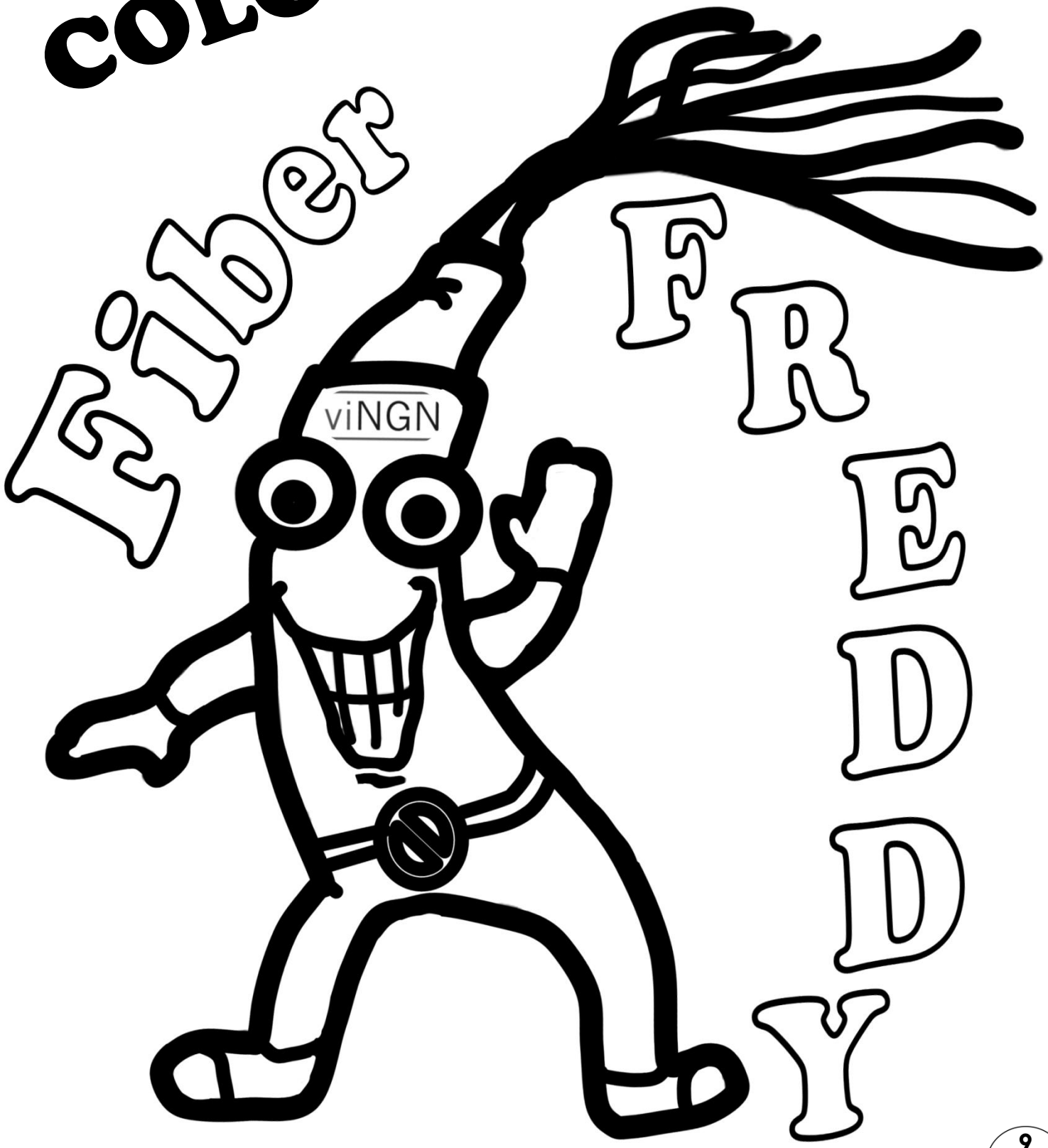
Internet Service Providers partner with viNGN to provide faster internet service to their customers.

ISPs deliver Internet to you. You can share signal to a laptop, tablet or smartphone with a wireless router (Wi-Fi).

What is inside a Fiber Optic Cable?

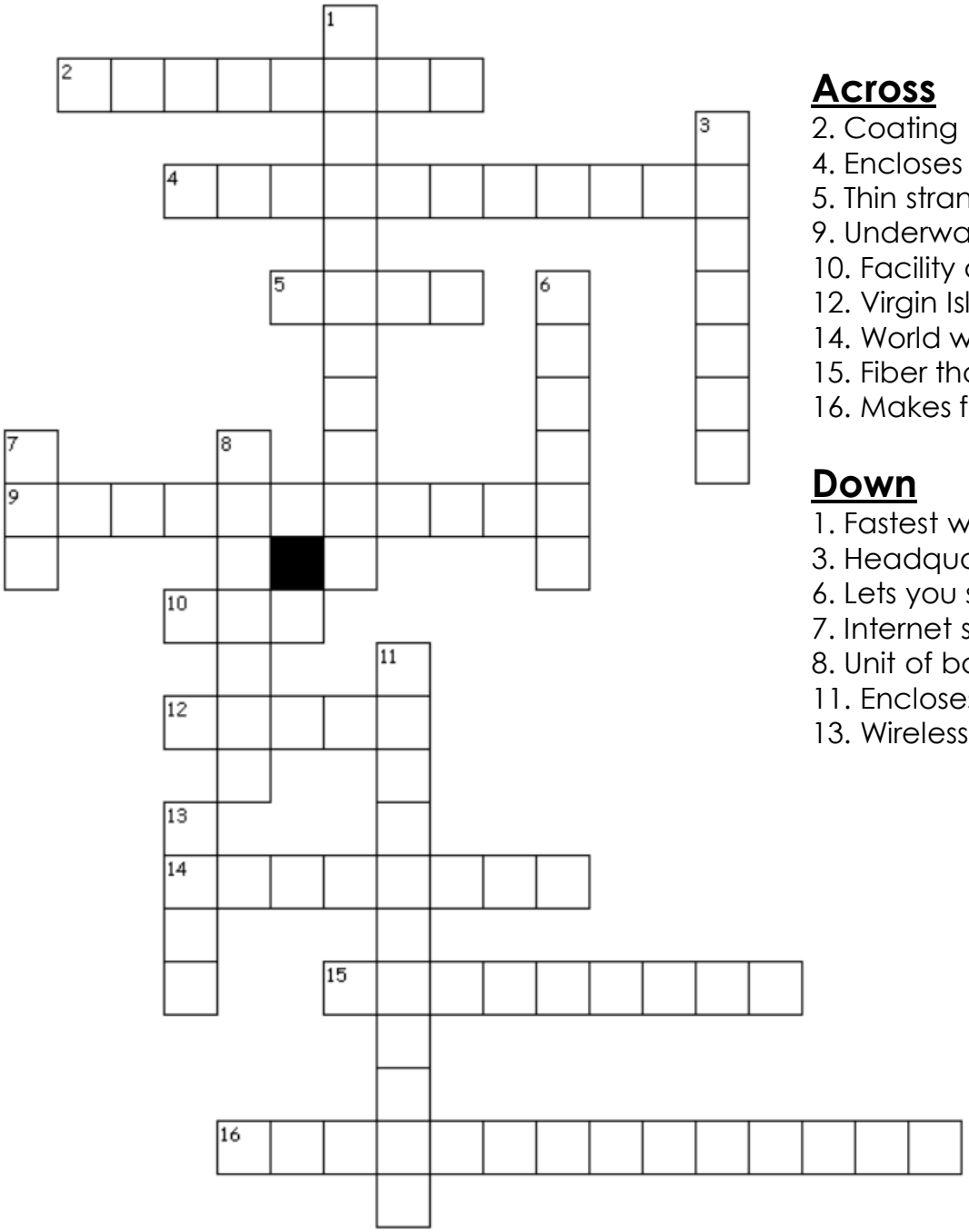


COLOR ME!



Fiber Optics Criss-Cross Challenge

Fill in all the words based on the clues! Can you get them all?
Find the answers in this book. Note: some answers have 2 words.



Across

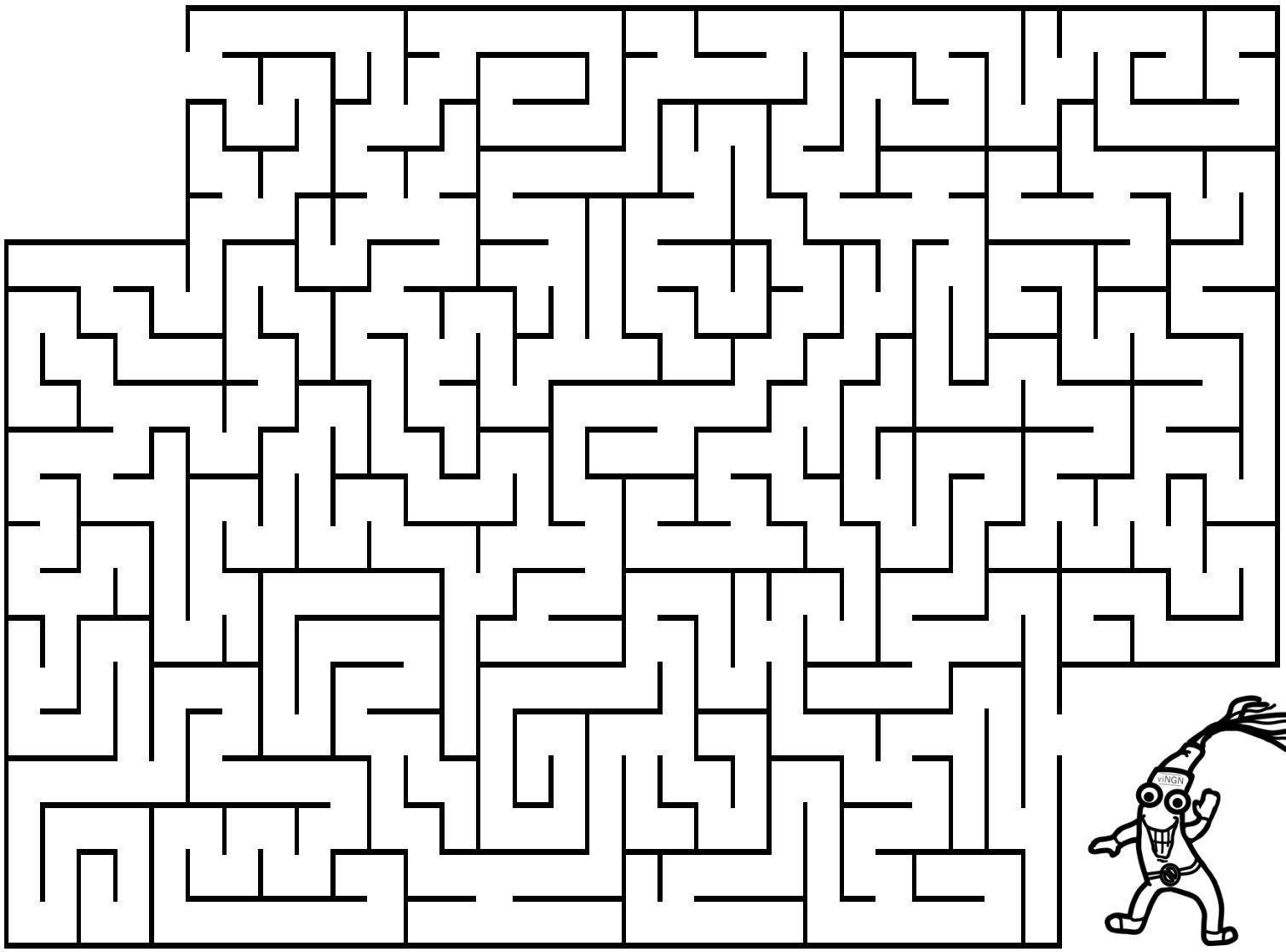
2. Coating on the fiber optic core
4. Encloses inner jacket
5. Thin strand of glass, within fiber optics
9. Underwater fiber optic line
10. Facility access point
12. Virgin Islands - owned fiber network
14. World wide web
15. Fiber that has no light in it
16. Makes fiber cable stronger

Down

1. Fastest wired connection
3. Headquarters of viNGN
6. Lets you share internet connection
7. Internet service provider
8. Unit of bandwidth measurement
11. Encloses plastic tubes in fiber optics
13. Wireless internet connection

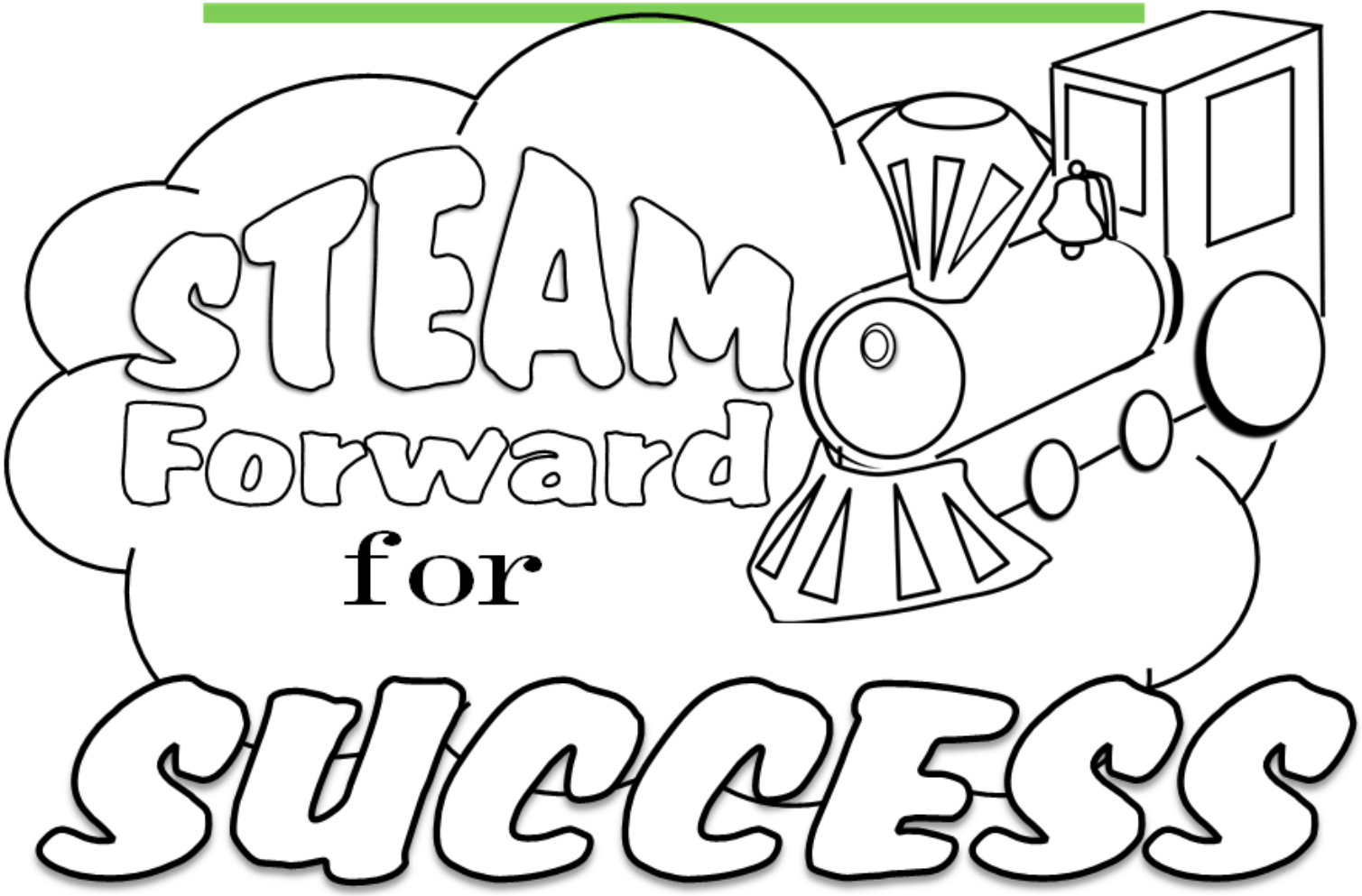
Get Fiber Freddy to the FAP!

Can you help him find his way?

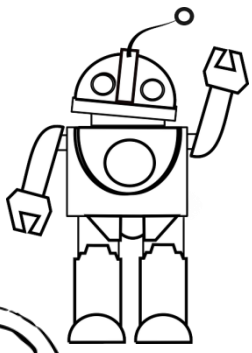


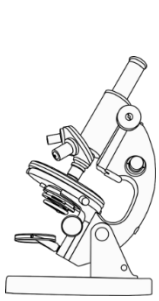
Color in the STEAM Train!

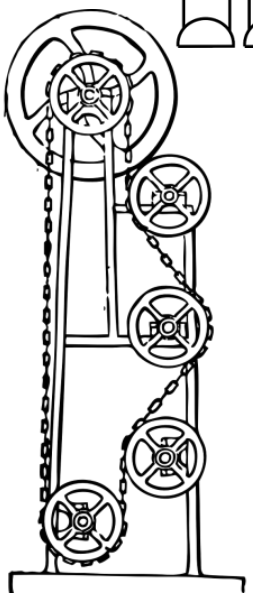
viNGN



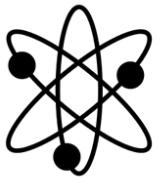
S.T.E.A.M. Careers







Science, Technology, Engineering, Art & Mathematics



FREE technical and professional online training:

viNGN.com/community

Careers in Fiber Optics

Courtesy of The Fiber Optic Association Inc. (www.thefoa.org)

Operations

The Chief Information Officer (CIO) oversees the logistics, upkeep and planning for the network's future. The CIO joins forces with engineers, OSP and administrative staff. Some useful skills: programming, network administration, coding, database management, network security.

Network Design

Engineers plan the information flow, speed and security needs of the entire network. They work closely with city officials and the Outside plant team. Some useful skills: network administration, network security, programming, cloud technology, coding, troubleshooting.

Installation

Outside plant (OSP) team members are sometimes called Field Technicians. They work in the FAPs and on location to install, repair and maintain the network. Some useful skills: splicing, electronics, network configuration, problem-solving, troubleshooting, equipment maintenance and management.

If you have good manual skills, like building things, and are curious about how things work, fiber optics may be for you!

All businesses also need people with skills in creating and handling documents, accounting, legal, human resources, and office management!

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