EMAIL SECURITY

- **Being a Detective**
  What to look for
- **Phishing**

www.whitecloudsecurity.com

8 DAYS AND 26 EMAILS TO ACHIEVE WHAT COULD'VE BEEN DONE IN A 1 MINUTE CONVERSATION.
Cathy Thorne © www.everyday people cartoons.com

"Wow! I've got one from someone I know!"

Be An Email Detective

Be An Email Detective

Learning to read email safely

Observe *Investigate* *Deduce*

Be An Email Detective

You've got email.

Is it spam?
Is it a phishing attempt?
Or is it malware?

It used to be malicious messages were sent by teenage hackers or by solo criminals working by themselves. Things have changed.

Today, organized crime sends many of the malicious emails, and those emails are increasingly sophisticated.

So how do you tell the good email from the bad?

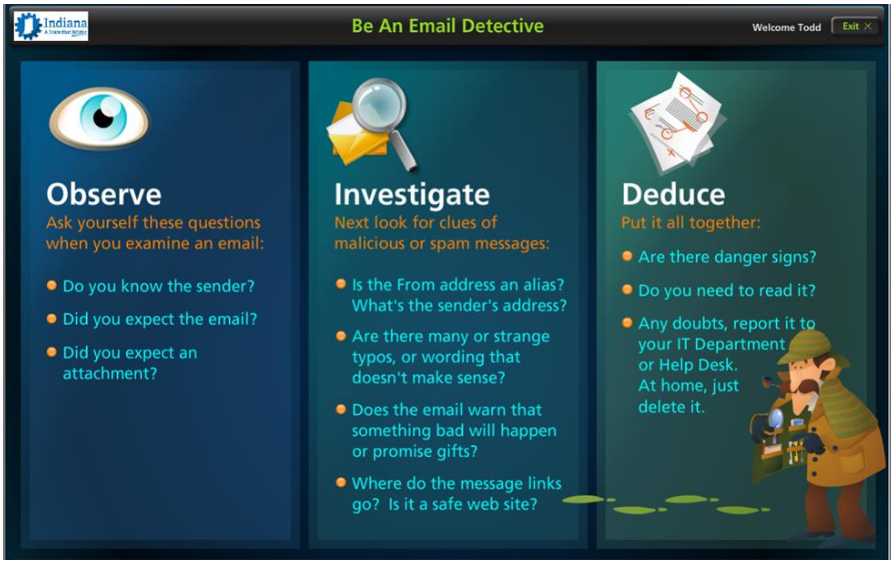
First, running anti-malware software on your computer and/or network is a must. It will catch most of the malicious email.

But software can't catch everything.

That's where you come in!

Be An Email Detective

You must develop email detective skills to be able to tell good messages from malicious ones.



Be An Email Detective

Observe

Ask yourself these questions when you examine an email:

- Do you know the sender?
- Did you expect the email?
- Did you expect an attachment?

Investigate

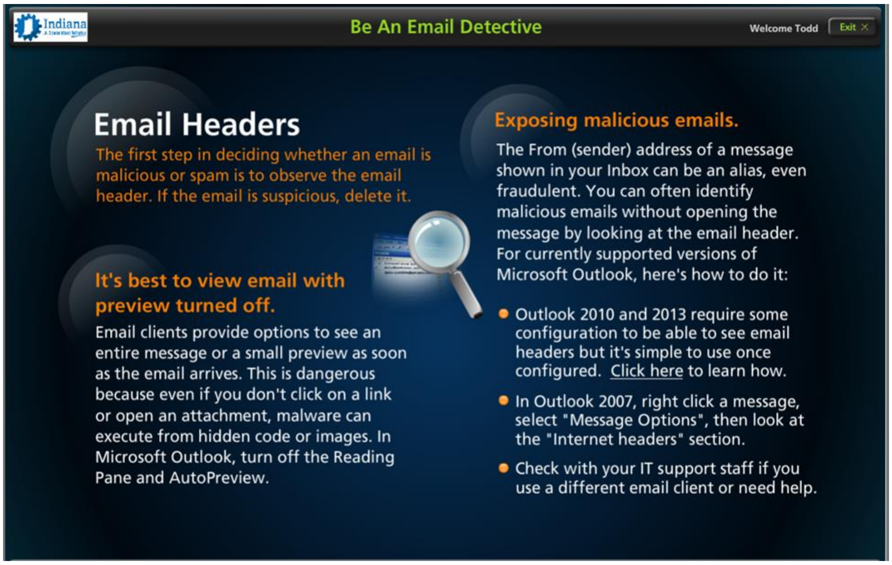
Next look for clues of malicious or spam messages:

- Is the From address an alias? What's the sender's address?
- Are there many or strange typos, or wording that doesn't make sense?
- Does the email warn that something bad will happen or promise gifts?
- Where do the message links go? Is it a safe web site?

Deduce

Put it all together:

- Are there danger signs?
- Do you need to read it?
- Any doubts, report it to your IT Department or Help Desk. At home, just delete it.



Be An Email Detective

Email Headers

The first step in deciding whether an email is malicious or spam is to observe the email header. If the email is suspicious, delete it.

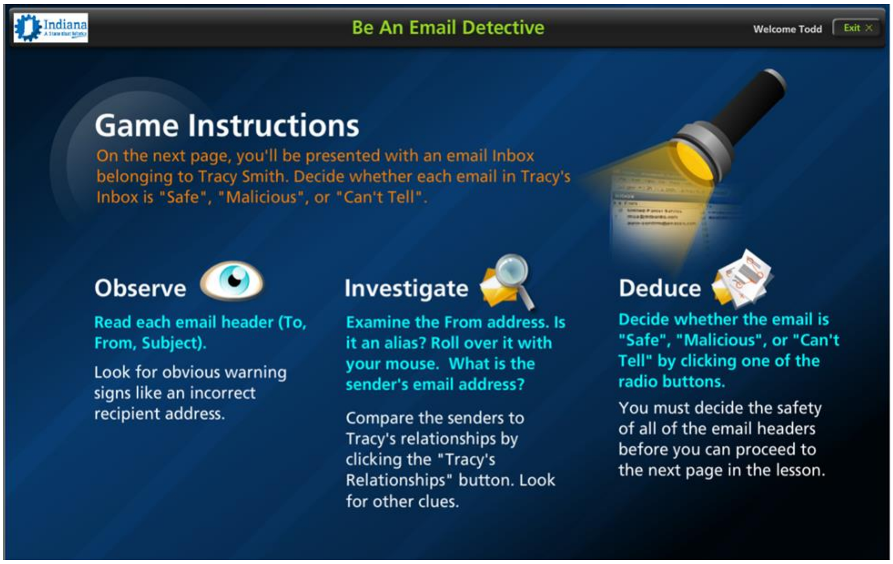
It's best to view email with preview turned off.

Email clients provide options to see an entire message or a small preview as soon as the email arrives. This is dangerous because even if you don't click on a link or open an attachment, malware can execute from hidden code or images. In Microsoft Outlook, turn off the Reading Pane and AutoPreview.

Exposing malicious emails.

The From (sender) address of a message shown in your Inbox can be an alias, even fraudulent. You can often identify malicious emails without opening the message by looking at the email header. For currently supported versions of Microsoft Outlook, here's how to do it:

- Outlook 2010 and 2013 require some configuration to be able to see email headers but it's simple to use once configured. Click here to learn how.
- In Outlook 2007, right click a message, select "Message Options", then look at the "Internet headers" section.
- Check with your IT support staff if you use a different email client or need help.



Be An Email Detective

Game Instructions

On the next page, you'll be presented with an email Inbox belonging to Tracy Smith. Decide whether each email in Tracy's Inbox is "Safe", "Malicious", or "Can't Tell".

Observe

Read each email header (To, From, Subject).

Look for obvious warning signs like an incorrect recipient address.

Investigate

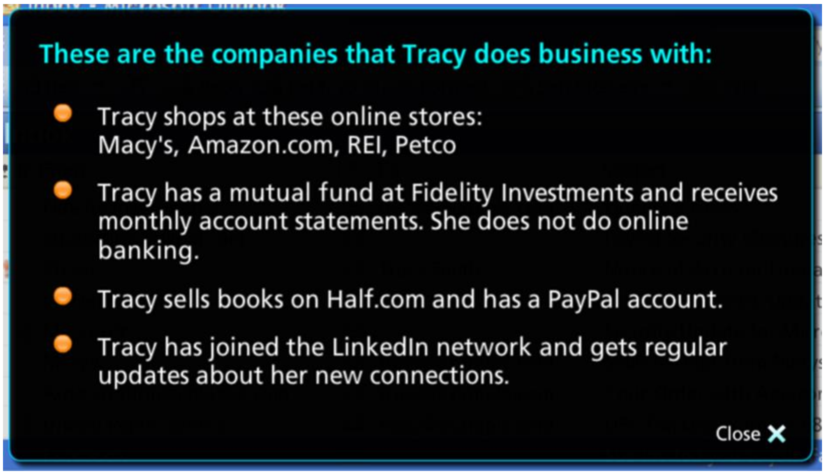
Examine the From address. Is it an alias? Roll over it with your mouse. What is the sender's email address?

Compare the senders to Tracy's relationships by clicking the "Tracy's Relationships" button. Look for other clues.

Deduce

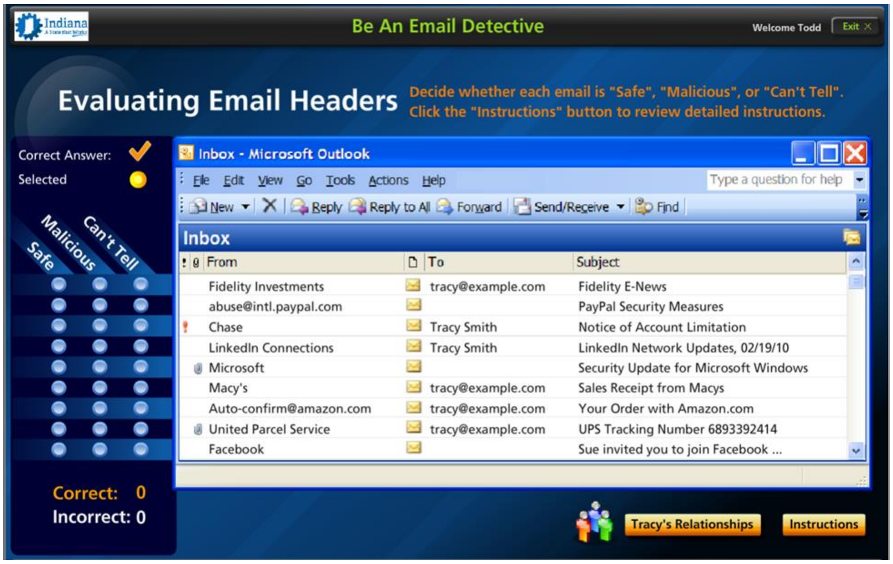
Decide whether the email is "Safe", "Malicious", or "Can't Tell" by clicking one of the radio buttons.

You must decide the safety of all of the email headers before you can proceed to the next page in the lesson.



These are the companies that Tracy does business with:

- Tracy shops at these online stores: Macy's, Amazon.com, REI, Petco
- Tracy has a mutual fund at Fidelity Investments and receives monthly account statements. She does not do online banking.
- Tracy sells books on Half.com and has a PayPal account.
- Tracy has joined the LinkedIn network and gets regular updates about her new connections.



Be An Email Detective

Evaluating Email Headers

Decide whether each email is "Safe", "Malicious", or "Can't Tell". Click the "Instructions" button to review detailed instructions.

Correct Answer: ✓

Selected ●

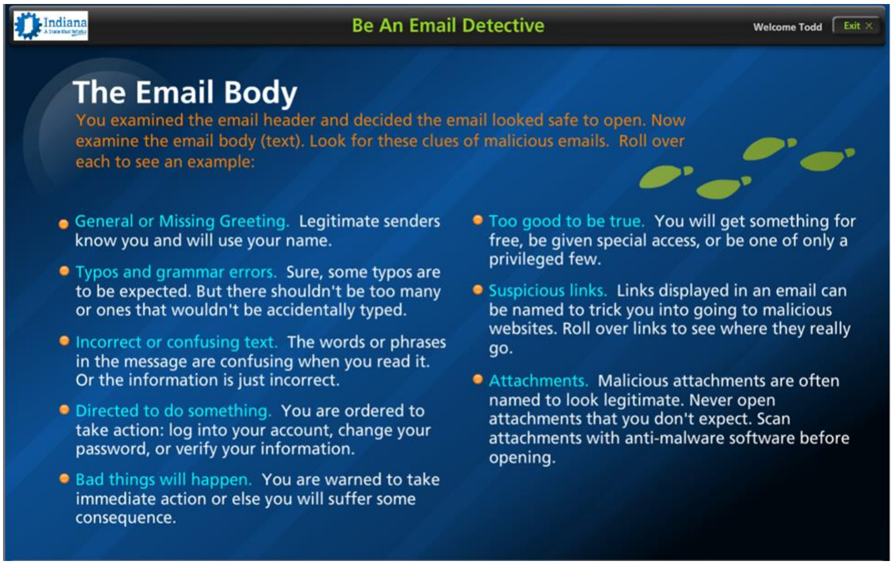
Inbox - Microsoft Outlook

Inbox

!	📎	From	To	Subject
		Fidelity Investments	tracy@example.com	Fidelity E-News
		abuse@intl.paypal.com		PayPal Security Measures
!		Chase	Tracy Smith	Notice of Account Limitation
		LinkedIn Connections	Tracy Smith	LinkedIn Network Updates, 02/19/10
	📎	Microsoft		Security Update for Microsoft Windows
		Macy's	tracy@example.com	Sales Receipt from Macys
		Auto-confirm@amazon.com	tracy@example.com	Your Order with Amazon.com
	📎	United Parcel Service	tracy@example.com	UPS Tracking Number 6893392414
		Facebook		Sue invited you to join Facebook ...

Correct: 0

Incorrect: 0

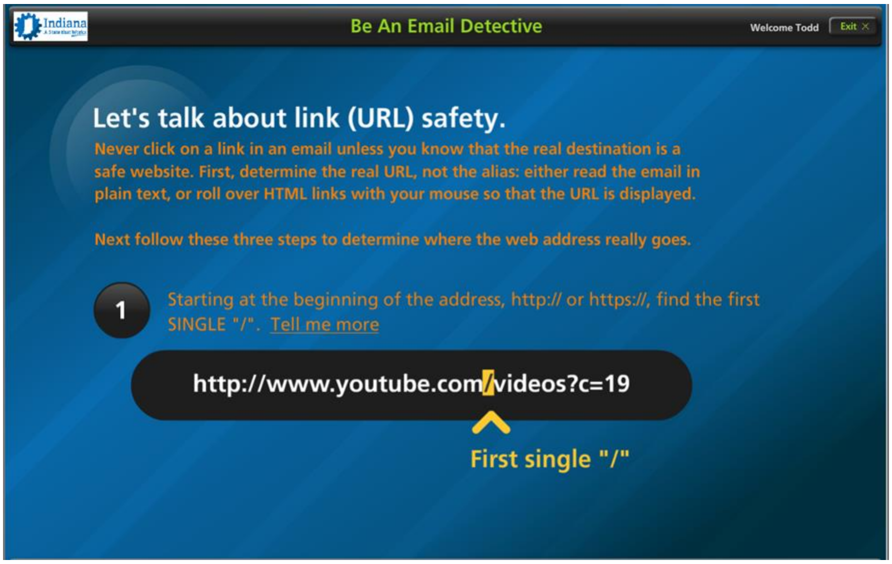


Be An Email Detective

The Email Body

You examined the email header and decided the email looked safe to open. Now examine the email body (text). Look for these clues of malicious emails. Roll over each to see an example:

- General or Missing Greeting. Legitimate senders know you and will use your name.
- Typos and grammar errors. Sure, some typos are to be expected. But there shouldn't be too many or ones that wouldn't be accidentally typed.
- Incorrect or confusing text. The words or phrases in the message are confusing when you read it. Or the information is just incorrect.
- Directed to do something. You are ordered to take action: log into your account, change your password, or verify your information.
- Bad things will happen. You are warned to take immediate action or else you will suffer some consequence.
- Too good to be true. You will get something for free, be given special access, or be one of only a privileged few.
- Suspicious links. Links displayed in an email can be named to trick you into going to malicious websites. Roll over links to see where they really go.
- Attachments. Malicious attachments are often named to look legitimate. Never open attachments that you don't expect. Scan attachments with anti-malware software before opening.



Be An Email Detective

Let's talk about link (URL) safety.

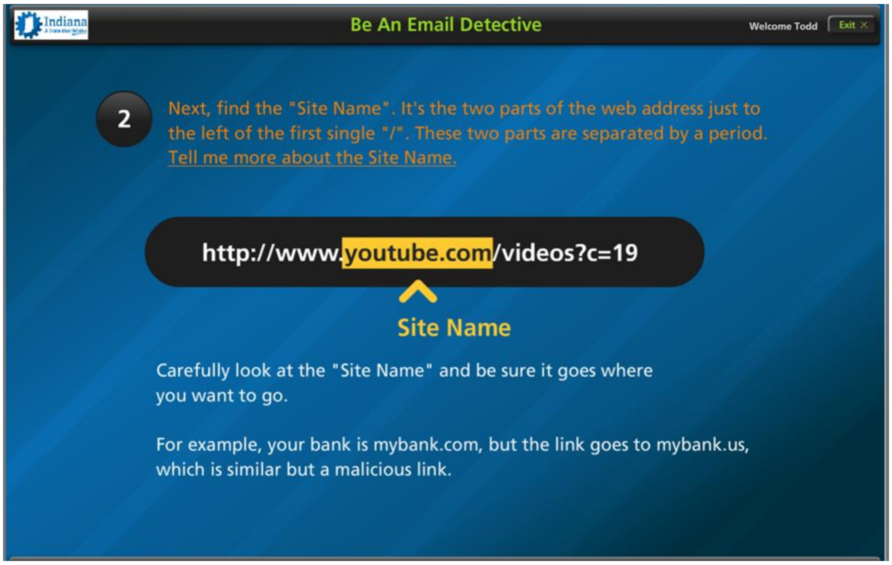
Never click on a link in an email unless you know that the real destination is a safe website. First, determine the real URL, not the alias: either read the email in plain text, or roll over HTML links with your mouse so that the URL is displayed.

Next follow these three steps to determine where the web address really goes.

1 Starting at the beginning of the address, http:// or https://, find the first SINGLE "/". Tell me more

http://www.youtube.com/videos?c=19

First single "/"



Be An Email Detective

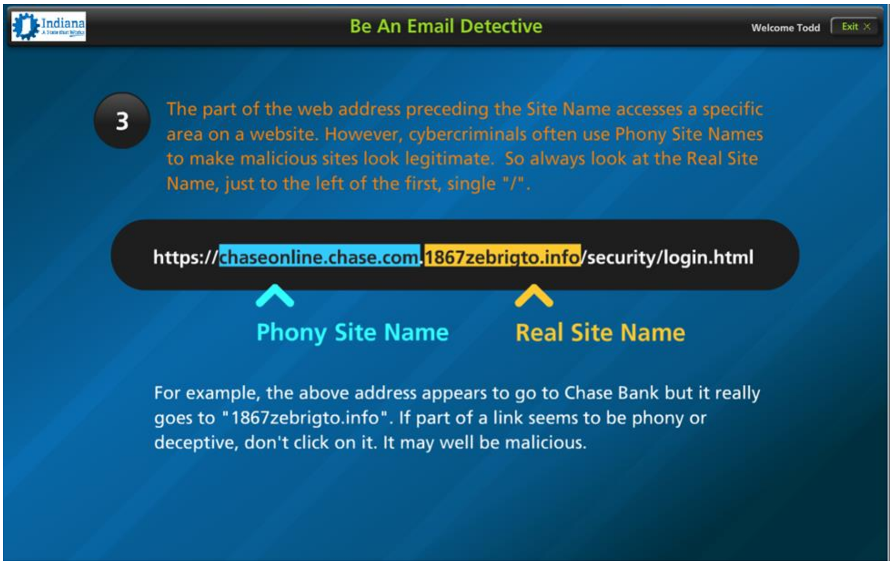
2 Next, find the "Site Name". It's the two parts of the web address just to the left of the first single "/". These two parts are separated by a period. Tell me more about the Site Name.

http://www.youtube.com/videos?c=19

Site Name

Carefully look at the "Site Name" and be sure it goes where you want to go.

For example, your bank is mybank.com, but the link goes to mybank.us, which is similar but a malicious link.



Be An Email Detective

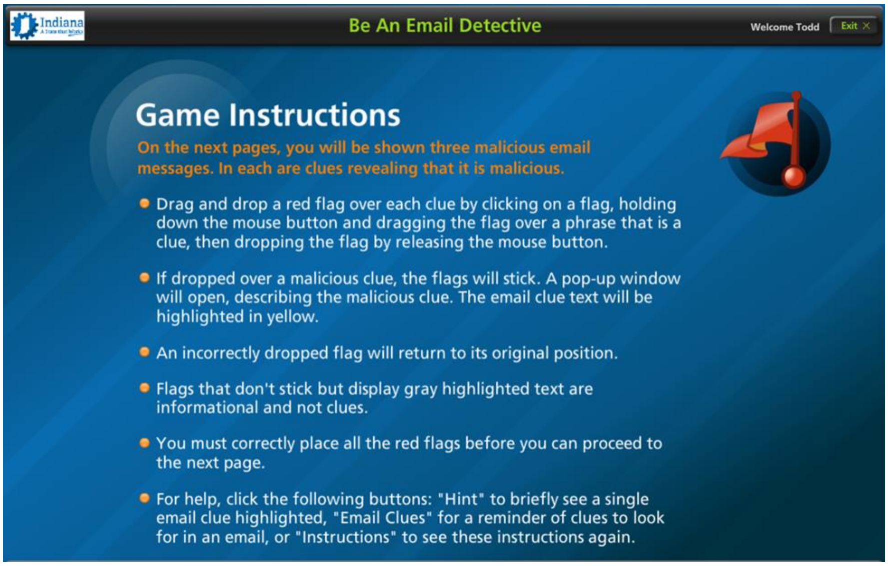
3 The part of the web address preceding the Site Name accesses a specific area on a website. However, cybercriminals often use Phony Site Names to make malicious sites look legitimate. So always look at the Real Site Name, just to the left of the first, single "/".

https://chaseonline.chase.com.1867zebrigto.info/security/login.html

Phony Site Name

Real Site Name

For example, the above address appears to go to Chase Bank but it really goes to "1867zebrigto.info". If part of a link seems to be phony or deceptive, don't click on it. It may well be malicious.

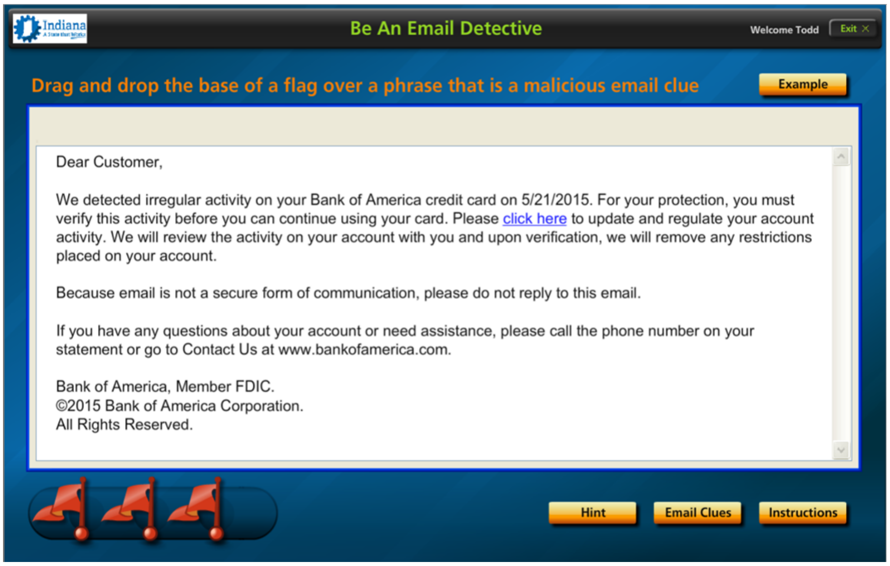


Be An Email Detective

Game Instructions

On the next pages, you will be shown three malicious email messages. In each are clues revealing that it is malicious.

- Drag and drop a red flag over each clue by clicking on a flag, holding down the mouse button and dragging the flag over a phrase that is a clue, then dropping the flag by releasing the mouse button.
- If dropped over a malicious clue, the flags will stick. A pop-up window will open, describing the malicious clue. The email clue text will be highlighted in yellow.
- An incorrectly dropped flag will return to its original position.
- Flags that don't stick but display gray highlighted text are informational and not clues.
- You must correctly place all the red flags before you can proceed to the next page.
- For help, click the following buttons: "Hint" to briefly see a single email clue highlighted, "Email Clues" for a reminder of clues to look for in an email, or "Instructions" to see these instructions again.



Be An Email Detective

Drag and drop the base of a flag over a phrase that is a malicious email clue

Dear Customer,

We detected irregular activity on your Bank of America credit card on 5/21/2015. For your protection, you must verify this activity before you can continue using your card. Please click here to update and regulate your account activity. We will review the activity on your account with you and upon verification, we will remove any restrictions placed on your account.

Because email is not a secure form of communication, please do not reply to this email.

If you have any questions about your account or need assistance, please call the phone number on your statement or go to Contact Us at www.bankofamerica.com.

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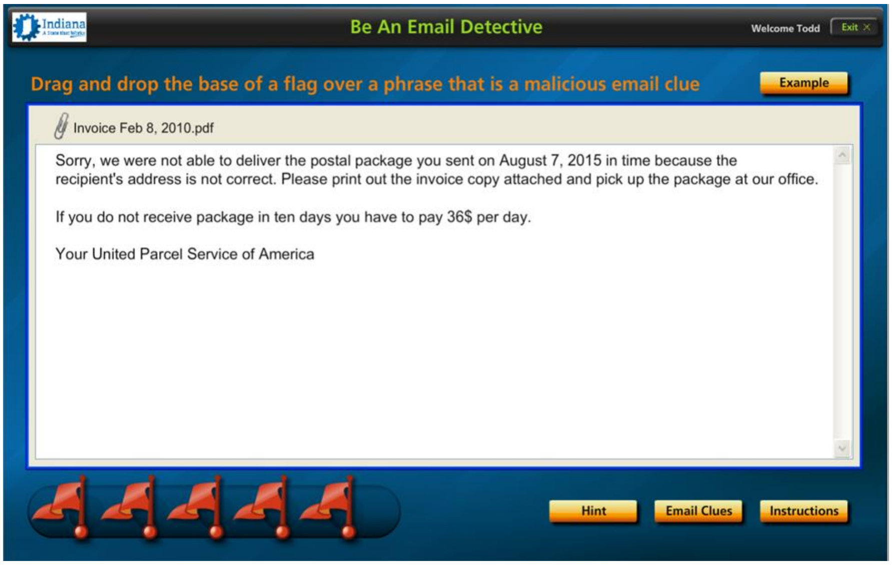
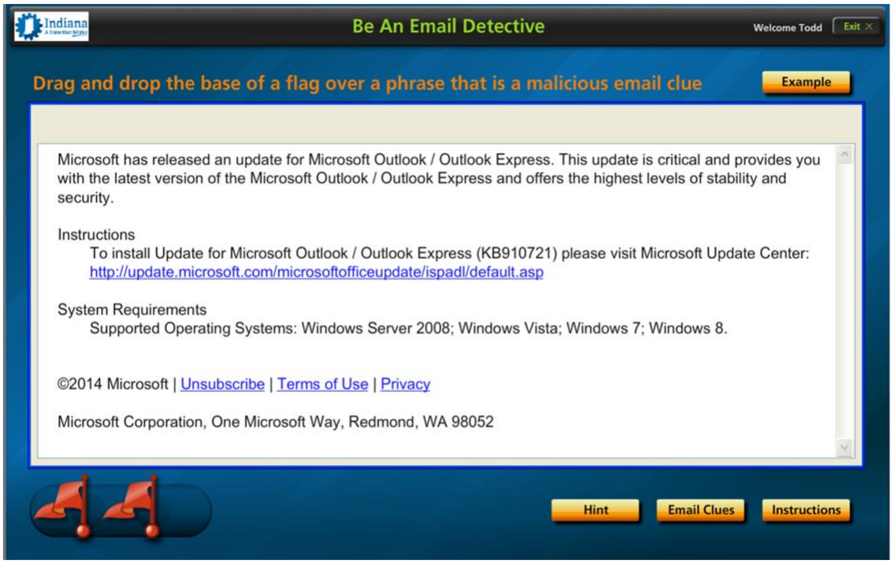


Sorry, we were not able to deliver the postal package you sent on August 7, 2015 in time because the recipient's address is not correct. Please print out the invoice copy attached and pick up the package at our office.

If you do not receive package in ten days you have to pay 36$ per day.

Your United Parcel Service of America



Microsoft has released an update for Microsoft Outlook / Outlook Express. This update is critical and provides you with the latest version of the Microsoft Outlook / Outlook Express and offers the highest levels of stability and security.

Instructions
To install Update for Microsoft Outlook / Outlook Express (KB910721) please visit Microsoft Update Center: http://update.microsoft.com/microsoftofficeupdate/ispadl/default.asp

System Requirements
Supported Operating Systems: Windows Server 2008; Windows Vista; Windows 7; Windows 8.

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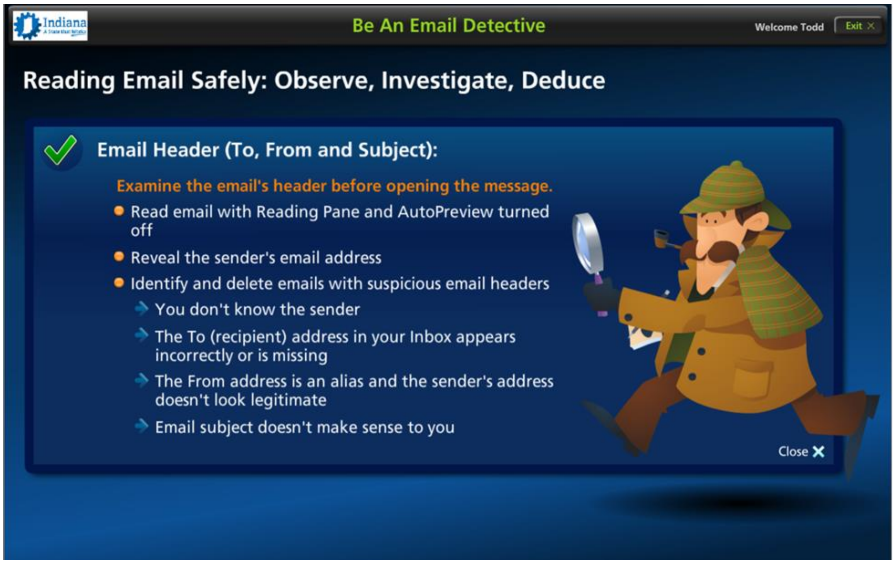
Microsoft Corporation, One Microsoft Way, Redmond, WA 98052



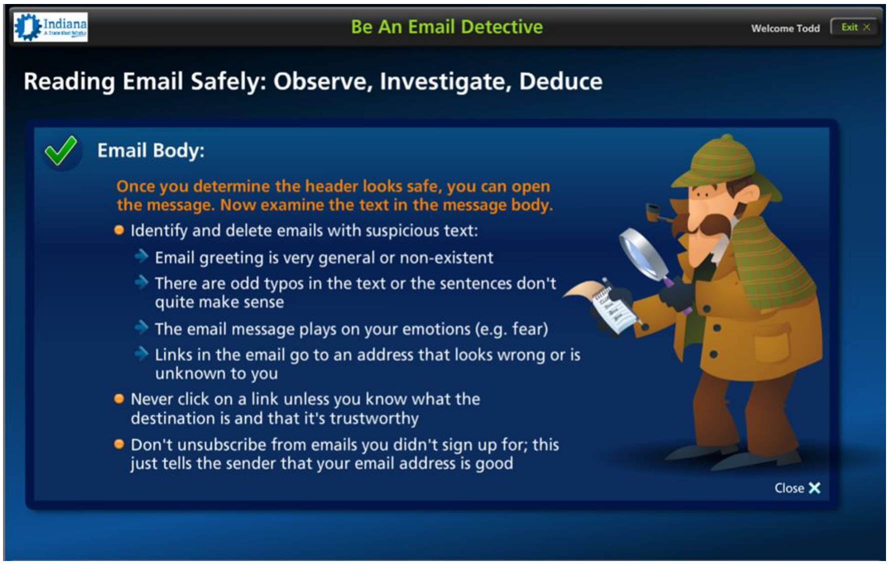
Be An Email Detective

Reading Email Safely: Observe, Investigate, Deduce

Email Header (To, From and Subject):

Examine the email's header before opening the message.

- Read email with Reading Pane and AutoPreview turned off
- Reveal the sender's email address
- Identify and delete emails with suspicious email headers
  - You don't know the sender
  - The To (recipient) address in your Inbox appears incorrectly or is missing
  - The From address is an alias and the sender's address doesn't look legitimate
  - Email subject doesn't make sense to you



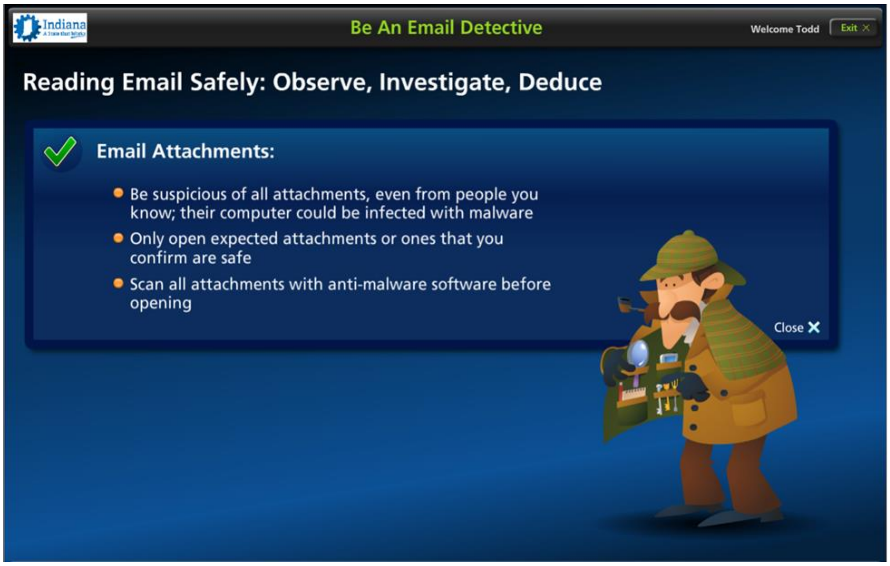
Be An Email Detective

Reading Email Safely: Observe, Investigate, Deduce

Email Body:

Once you determine the header looks safe, you can open the message. Now examine the text in the message body.

- Identify and delete emails with suspicious text:
  - Email greeting is very general or non-existent
  - There are odd typos in the text or the sentences don't quite make sense
  - The email message plays on your emotions (e.g. fear)
  - Links in the email go to an address that looks wrong or is unknown to you
- Never click on a link unless you know what the destination is and that it's trustworthy
- Don't unsubscribe from emails you didn't sign up for; this just tells the sender that your email address is good



Reading Email Safely: Observe, Investigate, Deduce

Email Attachments:

- Be suspicious of all attachments, even from people you know; their computer could be infected with malware
- Only open expected attachments or ones that you confirm are safe
- Scan all attachments with anti-malware software before opening

Fishing

Nope, not that kind . . .

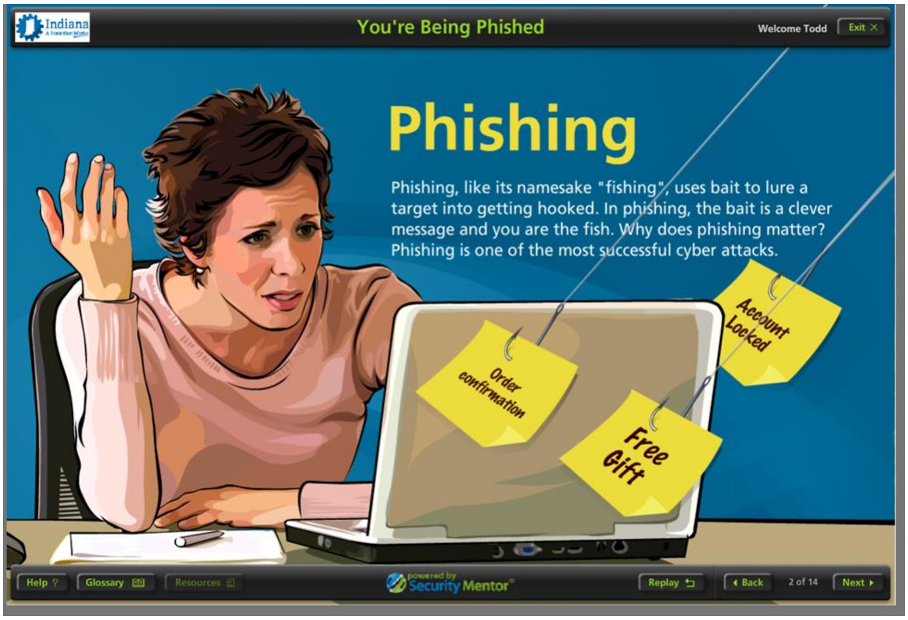
. . . this kind

Phishing

You're Being Phished

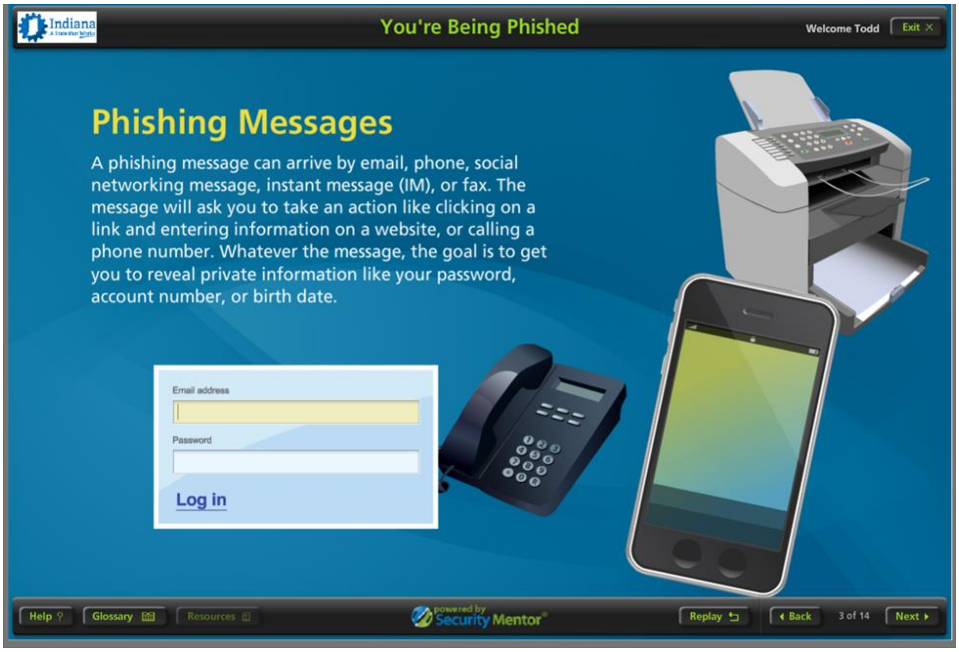
You're Being Phished

Don't take the bait



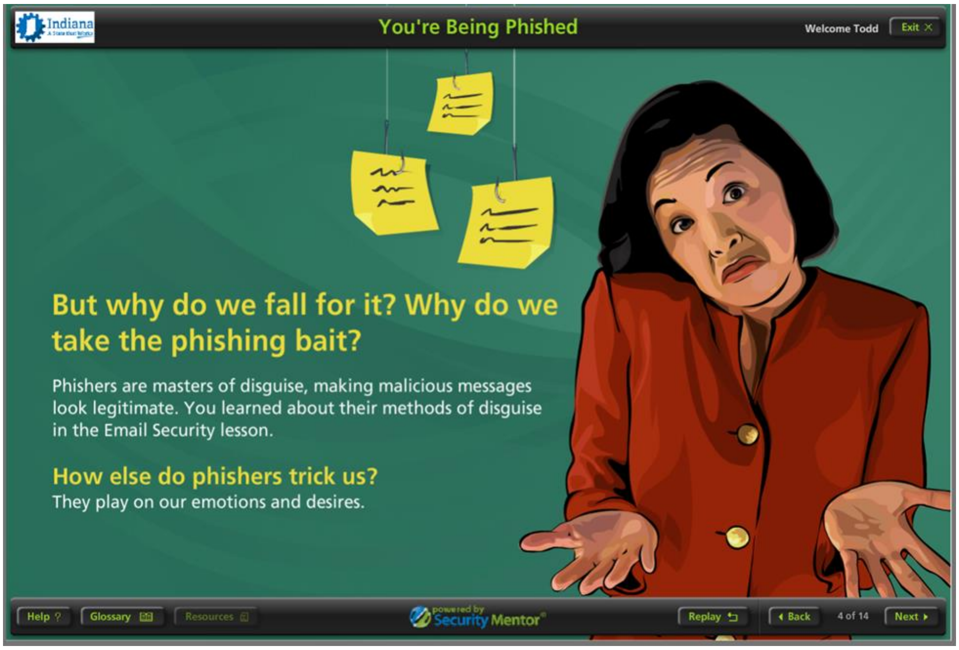
Phishing

Phishing, like its namesake "fishing", uses bait to lure a target into getting hooked. In phishing, the bait is a clever message and you are the fish. Why does phishing matter? Phishing is one of the most successful cyber attacks.



Phishing Messages

A phishing message can arrive by email, phone, social networking message, instant message (IM), or fax. The message will ask you to take an action like clicking on a link and entering information on a website, or calling a phone number. Whatever the message, the goal is to get you to reveal private information like your password, account number, or birth date.

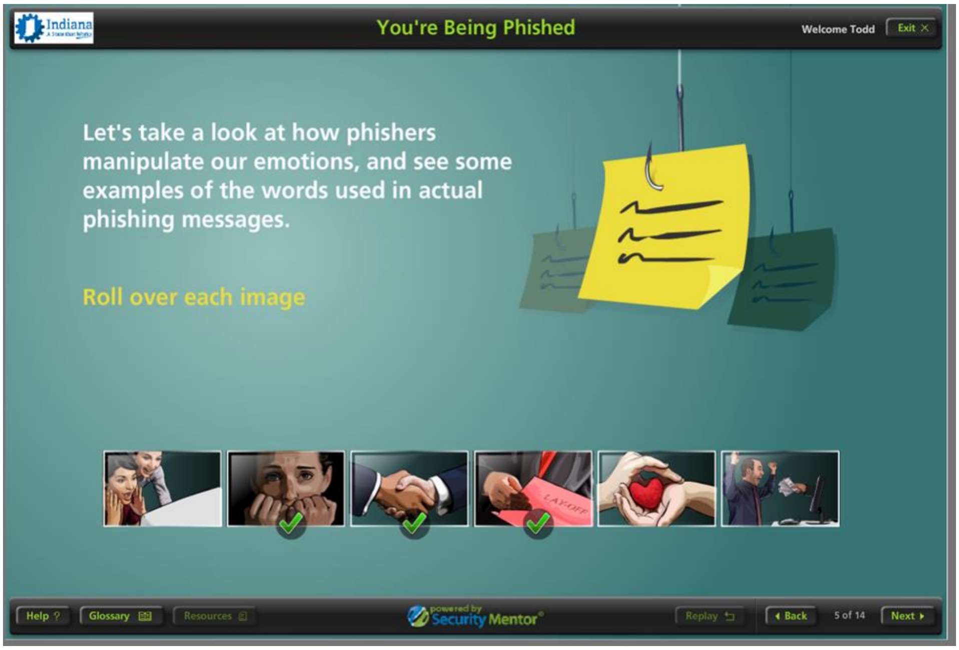


But why do we fall for it? Why do we take the phishing bait?

Phishers are masters of disguise, making malicious messages look legitimate. You learned about their methods of disguise in the Email Security lesson.

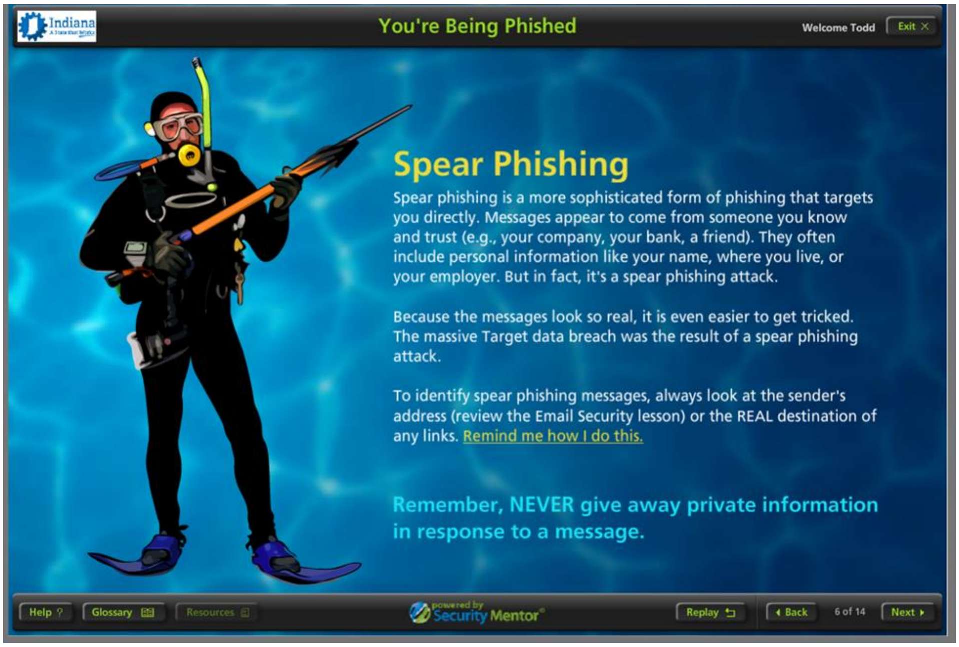
How else do phishers trick us?

They play on our emotions and desires.



Let's take a look at how phishers manipulate our emotions, and see some examples of the words used in actual phishing messages.

Roll over each image



You're Being Phished

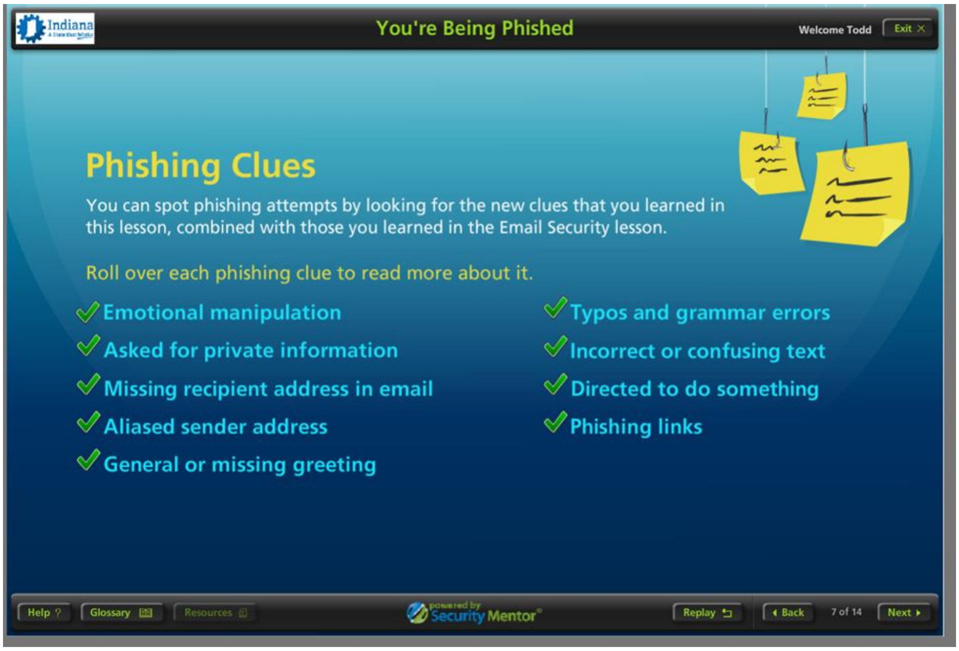
Spear Phishing

Spear phishing is a more sophisticated form of phishing that targets you directly. Messages appear to come from someone you know and trust (e.g., your company, your bank, a friend). They often include personal information like your name, where you live, or your employer. But in fact, it's a spear phishing attack.

Because the messages look so real, it is even easier to get tricked. The massive Target data breach was the result of a spear phishing attack.

To identify spear phishing messages, always look at the sender's address (review the Email Security lesson) or the REAL destination of any links. Remind me how I do this.

Remember, NEVER give away private information in response to a message.



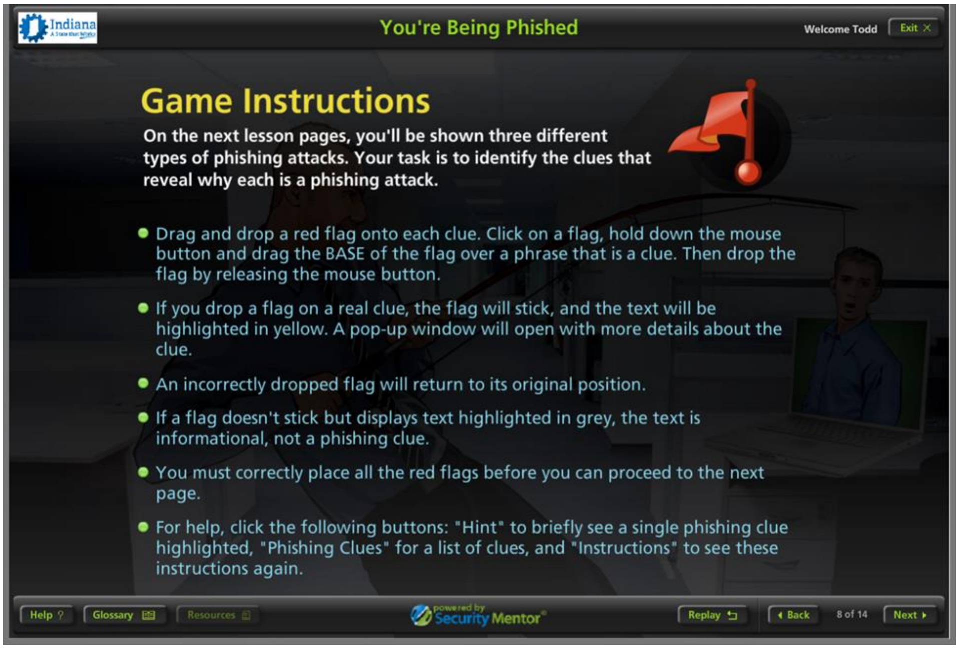
You're Being Phished

Phishing Clues

You can spot phishing attempts by looking for the new clues that you learned in this lesson, combined with those you learned in the Email Security lesson.

Roll over each phishing clue to read more about it.

- ✓ Emotional manipulation
- ✓ Asked for private information
- ✓ Missing recipient address in email
- ✓ Aliased sender address
- ✓ General or missing greeting
- ✓ Typos and grammar errors
- ✓ Incorrect or confusing text
- ✓ Directed to do something
- ✓ Phishing links

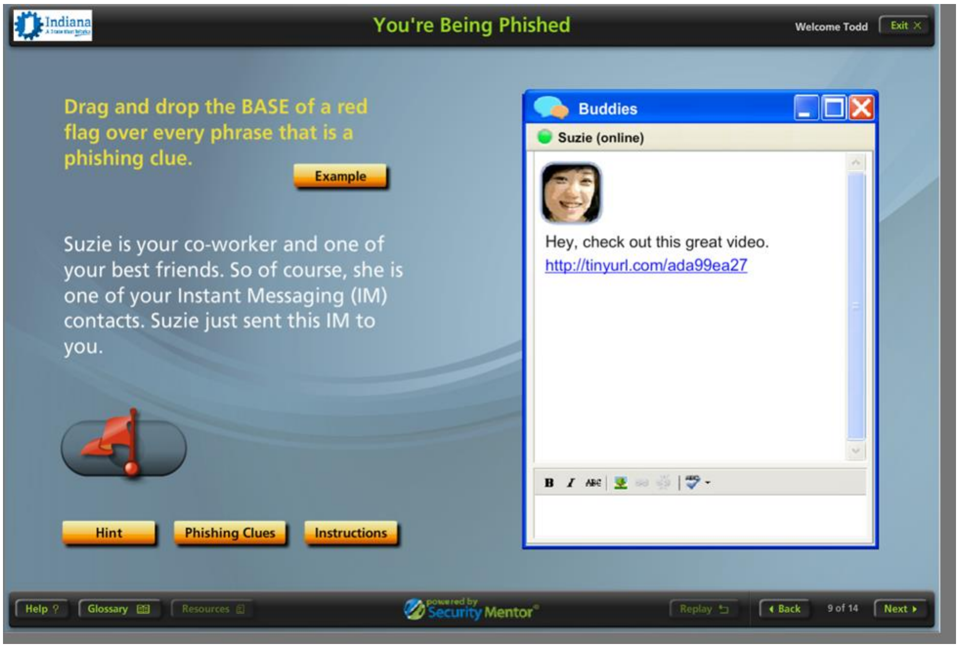


You're Being Phished

Game Instructions

On the next lesson pages, you'll be shown three different types of phishing attacks. Your task is to identify the clues that reveal why each is a phishing attack.

- Drag and drop a red flag onto each clue. Click on a flag, hold down the mouse button and drag the BASE of the flag over a phrase that is a clue. Then drop the flag by releasing the mouse button.
- If you drop a flag on a real clue, the flag will stick, and the text will be highlighted in yellow. A pop-up window will open with more details about the clue.
- An incorrectly dropped flag will return to its original position.
- If a flag doesn't stick but displays text highlighted in grey, the text is informational, not a phishing clue.
- You must correctly place all the red flags before you can proceed to the next page.
- For help, click the following buttons: "Hint" to briefly see a single phishing clue highlighted, "Phishing Clues" for a list of clues, and "Instructions" to see these instructions again.



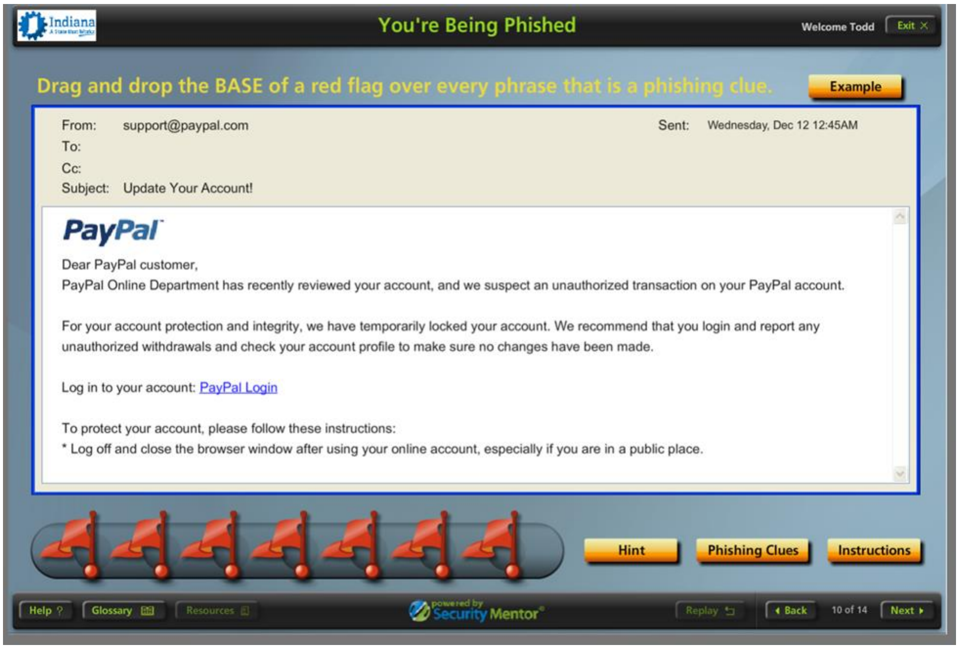
You're Being Phished

Drag and drop the BASE of a red flag over every phrase that is a phishing clue.

Suzie is your co-worker and one of your best friends. So of course, she is one of your Instant Messaging (IM) contacts. Suzie just sent this IM to you.

Suzie (online)

Hey, check out this great video.
http://tinyurl.com/ada99ea27



Drag and drop the BASE of a red flag over every phrase that is a phishing clue.

From: support@paypal.com
To:
Cc:
Subject: Update Your Account!
Sent: Wednesday, Dec 12 12:45AM

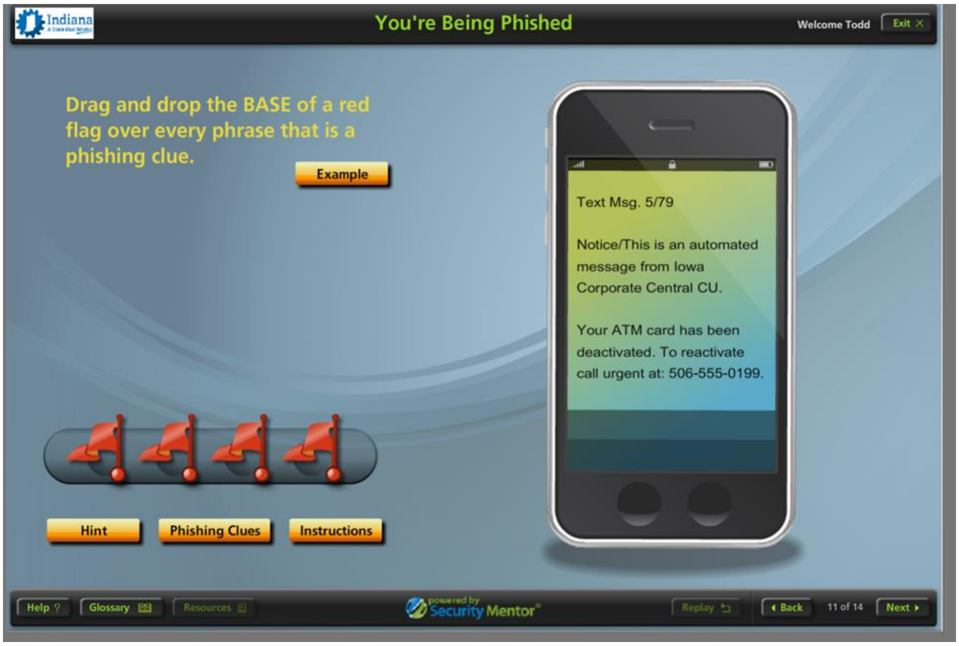
PayPal

Dear PayPal customer,
PayPal Online Department has recently reviewed your account, and we suspect an unauthorized transaction on your PayPal account.

For your account protection and integrity, we have temporarily locked your account. We recommend that you login and report any unauthorized withdrawals and check your account profile to make sure no changes have been made.

Log in to your account: PayPal Login

To protect your account, please follow these instructions:
* Log off and close the browser window after using your online account, especially if you are in a public place.

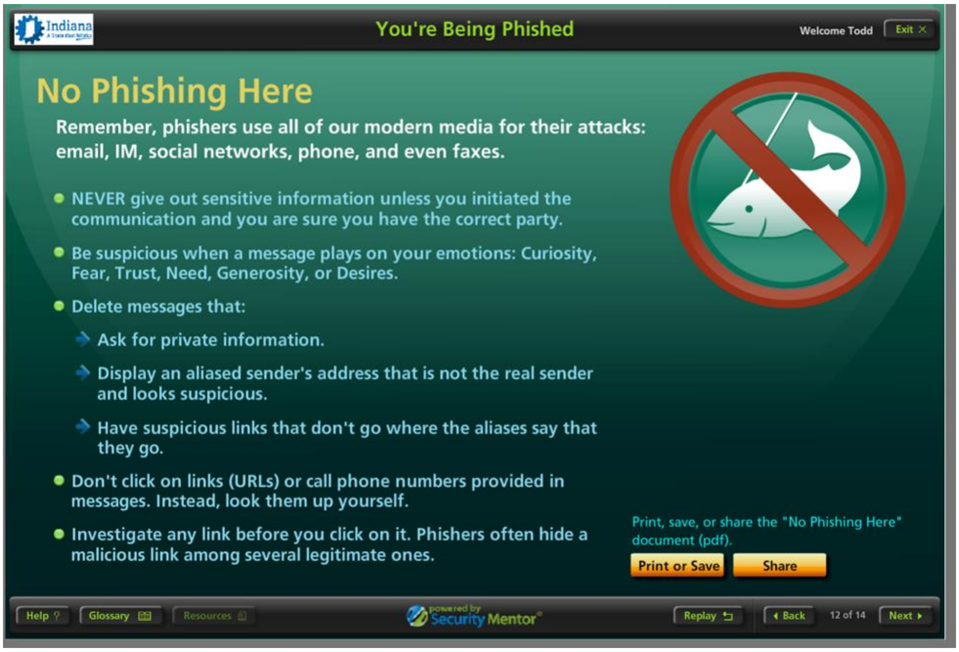


Drag and drop the BASE of a red flag over every phrase that is a phishing clue.

Text Msg. 5/79

Notice/This is an automated message from Iowa Corporate Central CU.

Your ATM card has been deactivated. To reactivate call urgent at: 506-555-0199.

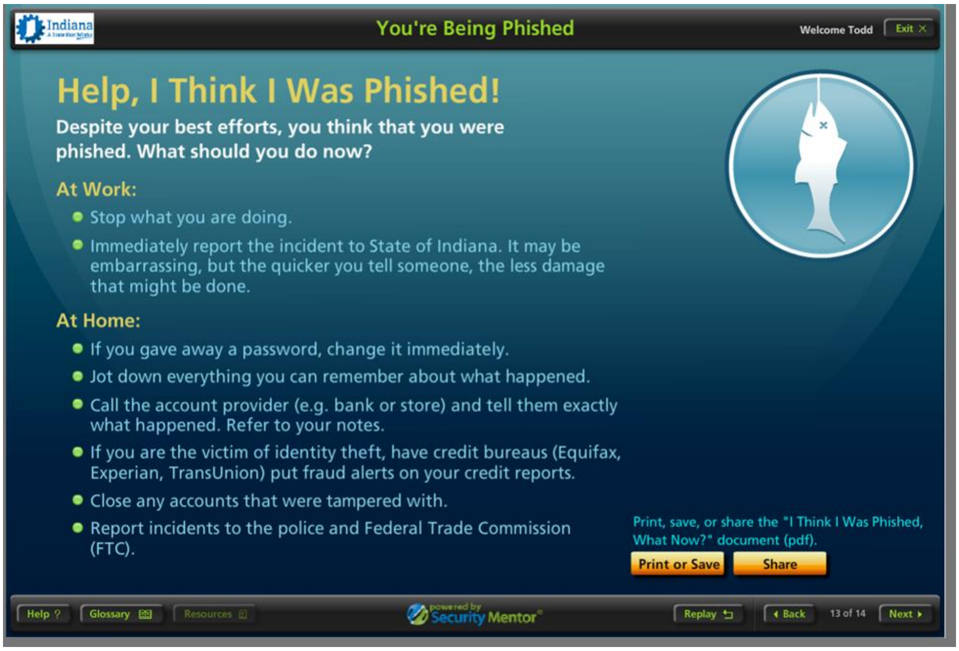


No Phishing Here

Remember, phishers use all of our modern media for their attacks: email, IM, social networks, phone, and even faxes.

- NEVER give out sensitive information unless you initiated the communication and you are sure you have the correct party.
- Be suspicious when a message plays on your emotions: Curiosity, Fear, Trust, Need, Generosity, or Desires.
- Delete messages that:
  - Ask for private information.
  - Display an aliased sender's address that is not the real sender and looks suspicious.
  - Have suspicious links that don't go where the aliases say that they go.
- Don't click on links (URLs) or call phone numbers provided in messages. Instead, look them up yourself.
- Investigate any link before you click on it. Phishers often hide a malicious link among several legitimate ones.

Print, save, or share the "No Phishing Here" document (pdf).



Help, I Think I Was Phished!

Despite your best efforts, you think that you were phished. What should you do now?

At Work:

- Stop what you are doing.
- Immediately report the incident to State of Indiana. It may be embarrassing, but the quicker you tell someone, the less damage that might be done.

At Home:

- If you gave away a password, change it immediately.
- Jot down everything you can remember about what happened.
- Call the account provider (e.g. bank or store) and tell them exactly what happened. Refer to your notes.
- If you are the victim of identity theft, have credit bureaus (Equifax, Experian, TransUnion) put fraud alerts on your credit reports.
- Close any accounts that were tampered with.
- Report incidents to the police and Federal Trade Commission (FTC).

Print, save, or share the "I Think I Was Phished, What Now?" document (pdf).

Beware Of Phishing