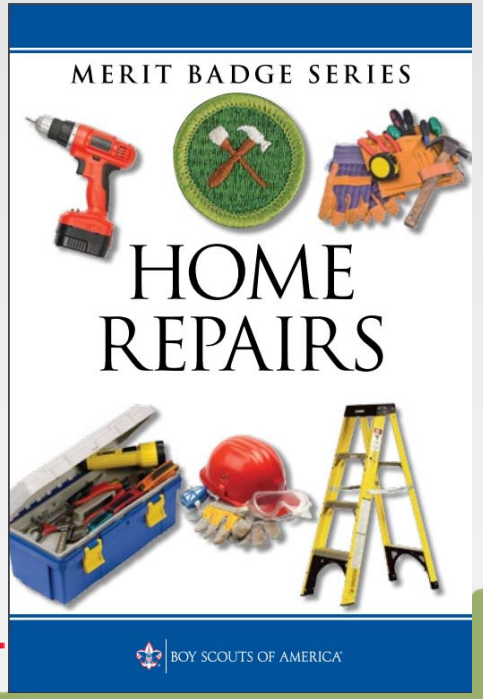
BOY SCOUTS OF AMERICA
VIRGINIA HEADWATERS COUNCIL

Home Repairs Merit Badge - PART FOUR

Eric Cutright, SM Troop 1029 (F), June 2020



Prepared.

Home Repairs Merit Badge
VAHC Online Class June 2020

Day 1 – Overview of requirements, Eric's advice - don't panic!,
Requirement 2 - Keeping the outside ummm, outside

- Watch Mr. Eric demo key tools and skills

Day 2 – Requirement 3 - General repairs and painting, oh and a fence
Requirement 4 - Shockingly enough, electricity IS your friend

- Watch Mr. Eric demo key tools and skills
- Showcase: Scout project pictures (as available)

Day 3 – Requirement 5 – Fix that drip, unclog that yuck

- Watch Mr. Eric demo key tools and skills
- Showcase: Scout project pictures (as available)

Day 4 – Requirement 6 - Bling up the inside of yo crib

- Watch Mr. Eric demo key tools and skills
- Showcase: Scout project pictures (as available)

- **Note: I am covering Requirement 1 (Safety) within each project group (2, 3, 4, 5, and 6) to better focus on the specific tools for those projects**

The Plan for Today
Part Three – Yo ! Bling it up !

- **Don’t Panic !!**
- **Requirement 6 - Bling up the inside of yo crib !**
  - Watch Mr. Eric demo key tools and skills *****
- **Showcase: Scout project pictures (as available)**

* First Aid advice gladly accepted via Zoom chat if needed

Mr. Eric's Advice for MB Requirements

(14 projects? – aarrgghh !!)

Don't Panic. For Life.™

Don’t Panic – One at a Time !

- **In my opinion, the 14 project requirements are WAAAYYY too specific and Scouts should be given more flexibility to choose other projects, BUT we can’t change them**
  - When I run this badge in person, I have stations set up for Scouts to work on my selected set of requirements in a single day, with instructors teaching the skills and supervising each station
  - Talk over the options with your parents to decide what would be most helpful for you to do around your house, and what jobs you feel comfortable with
  - Take your time and do each project to the best of your ability
  - You must send me pictures of each completed project along with a description of what you did, problems you had, and anything you would do differently
  - If you can’t finish everything, work with me to record your completions so you can finish later
- **Teamwork makes the (Merit Badge) dream work!**
  - Several siblings, friends, and Patrols are taking this class together
  - You can work as a team but must share equally in the work

Don’t Panic. For Life.™

Yo! It DOESN'T Have to be YOUR House

- **Note that none of the project requirements say it has to be done in YOUR house!!!**
  - You can use this badge to help out a neighbor, family member, or friend at THEIR house !!
  - You can also do the work at your school, church, chartered organization, or somewhere in your community
  - A Scout is Helpful !!!

- **If you are working outside of your own house, be sure to follow COVID-19 guidelines!**

Don’t Panic – Keep Safe !

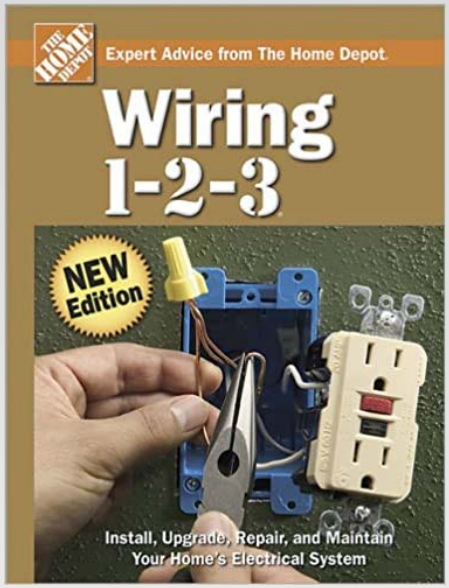
- **The “under the supervision of your MBC” part will obviously not be possible online**
- **You need to be supervised by a parent or a handy dandy family friend (but follow COVID-19 guidelines)**
  - Try to find someone who has done the skill before or is generally talented at home repairs
- **It’s good to learn new things, but don’t try any projects that are far beyond your ability that will just end up frustrating you**
  - **Be safe! Be sure to follow all my safety rules**
- **These are AWESOME life skills to master – you can save so much $$ by doing your own home repairs when you can !!**

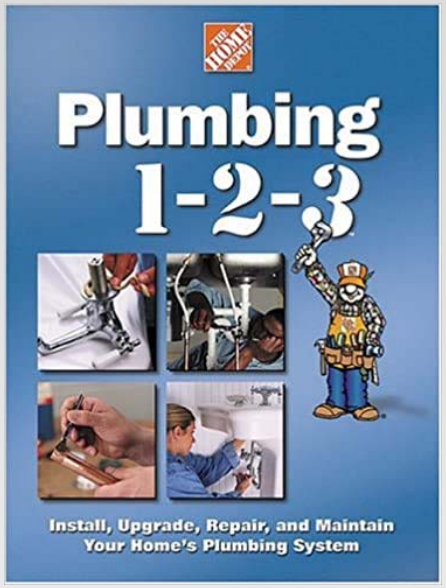
Don’t Panic. For Life.™

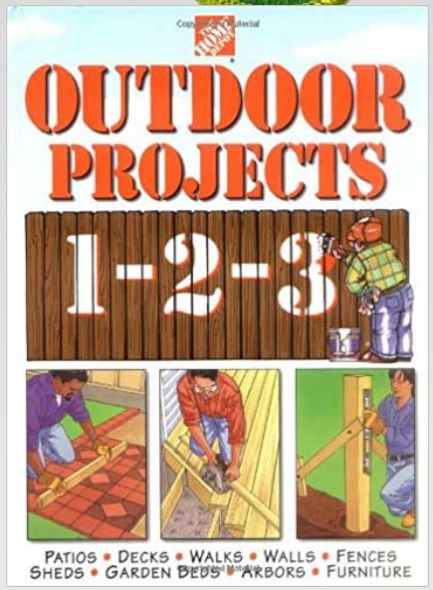
Don’t Panic – Get Help !

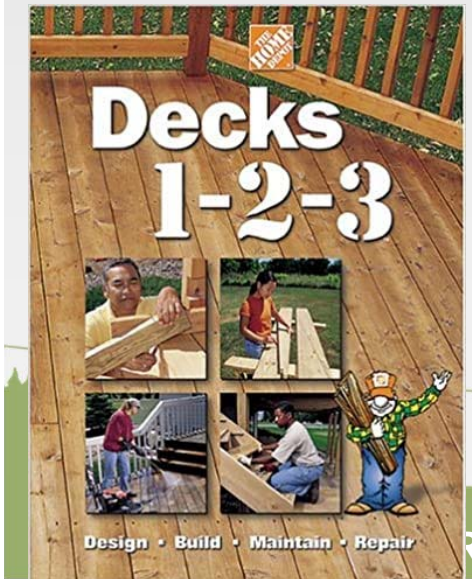
- **Help is available if you seek it**
  - In this class, I will go over the basic tools and skills for most of the home projects, plus the most important safety rules and guidelines
  - On my Troop website, I kept my older materials which are stand-alone for many of the requirements to make it easier to find help for the specific project you want to try
  - Both Lowe’s and Home Depot have nice “Home Repairs 1-2-3” books which I found helpful when I first got started – see next slide
  - There are good resources on the internet (search with your parents)
  - There are good resources listed in the HR MB Pamphlet itself
  - You are welcome to email me with questions (CC a parent) !!

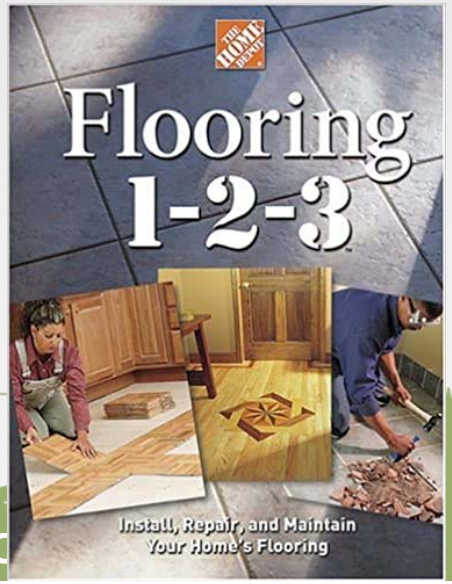
Don’t Panic – Good Books !

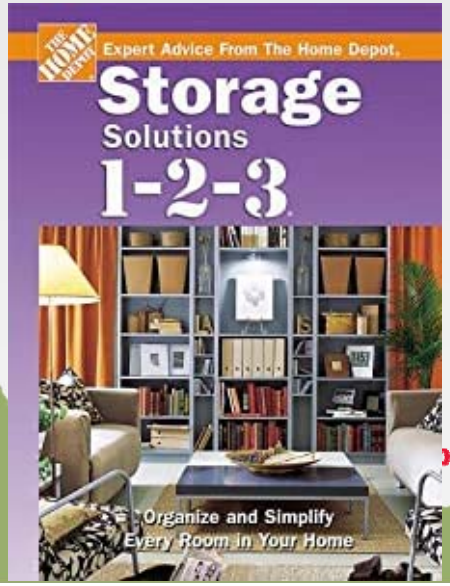


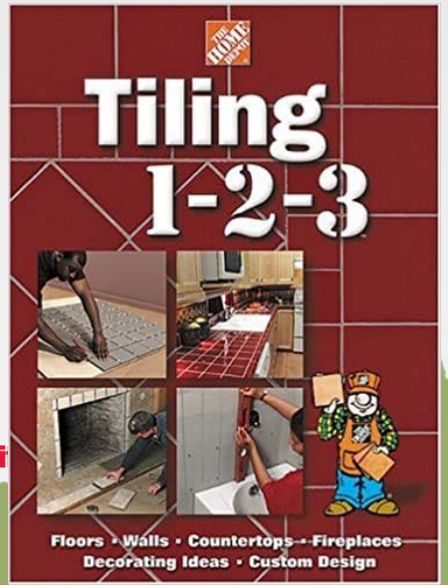




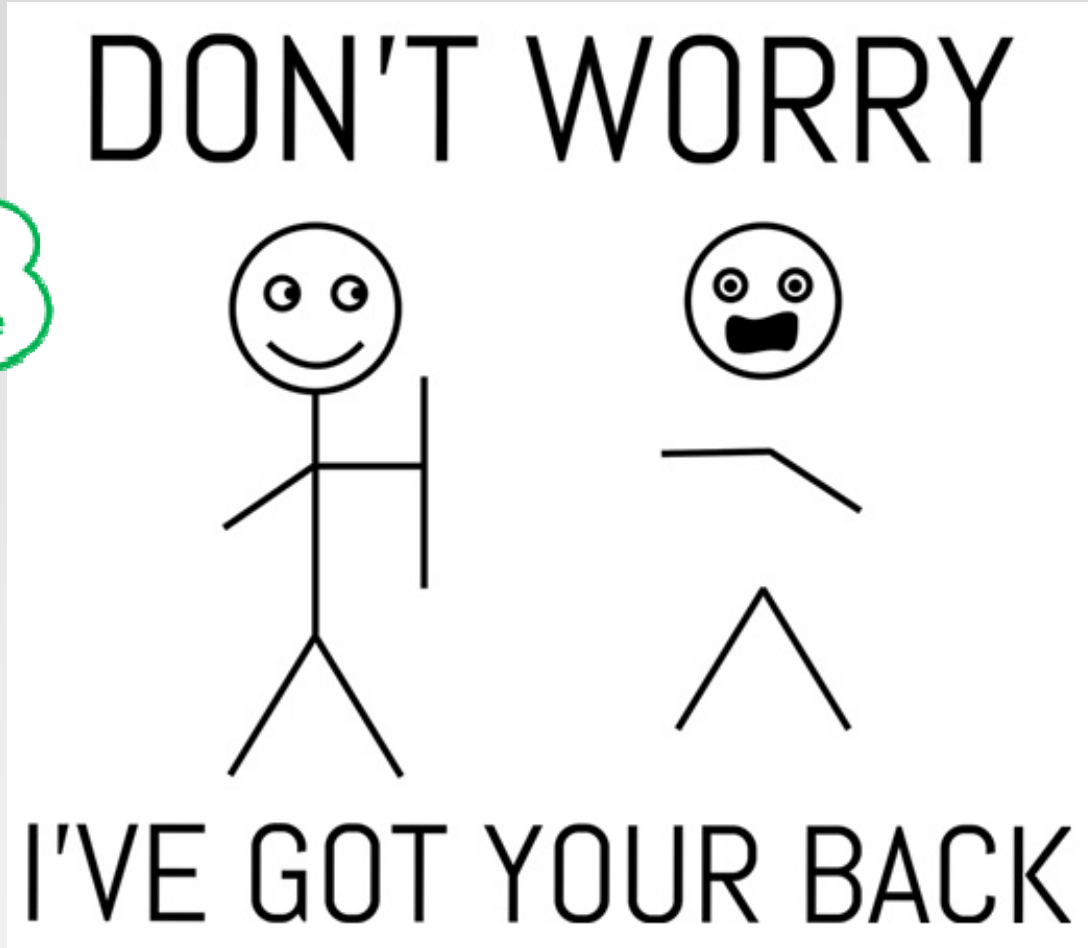








We've Sooo Got This !



Requirement 6
Projects:
Bling up the inside of yo crib

Bling It Up. For Life.™

Home Repairs Requirement 6

1. **Do the following:**
   a. Explain to your counselor the most likely hazards you may encounter while working on home repairs and what you should do to anticipate, mitigate and prevent, and respond to these hazards. Describe the appropriate safety gear and clothing that should be used when working on home repairs.
   b. Discuss general precautions related to home repairs. Name at least 10 safe practices that every home repairer should exercise.

6. **Under the supervision of your merit badge counselor, do THREE of the following (Mr. Eric's suggestions in red, but depends on tools at home):**
   a. Paint a wall or ceiling.
   b. Repair or replace damaged tile, linoleum, or vinyl flooring.
   c. Install drapery or curtain rods and then hang drapes or curtains.
   d. Replace window blind cords.
   e. Repair or replace a window sash cord.
   f. Reinforce a picture frame.
   g. Mend an object made of china, glass, or pottery.

Requirement 6 Projects: Tools and Tool Safety (part of Requirement 1)

Be Safe. For Life.™

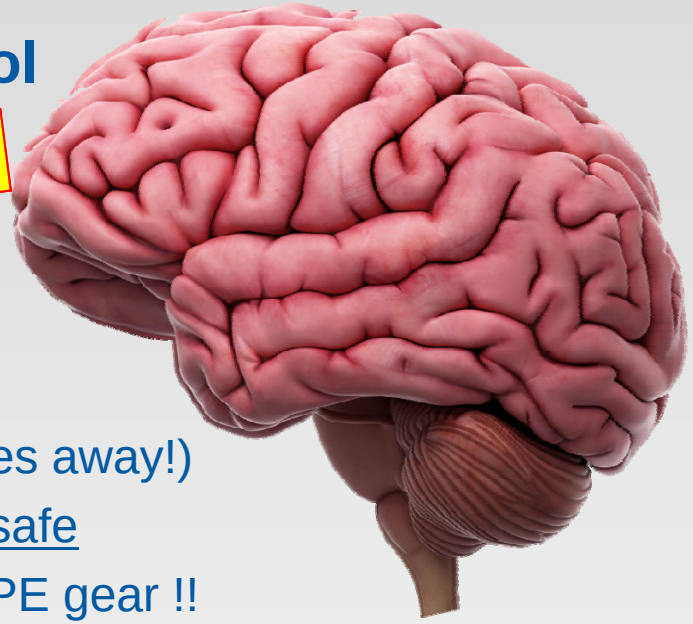
Home Repairs Tools – Mr. Eric's Instruction Key

- **For the following slides, I use these guidelines:**
  - I use very scientific and precise names for each important part, so pay close attention so you can learn the (Cut)right terms
  - Hazardous areas/parts/info are shown in red, usually with a red circle around the danger zone
  - Other useful information is shown in any color except red
  - The slide title (or the tool picture) will show what PPE safety gear should be used with each tool

Home Repairs Tools – The Most Important Tool

- **Duh - this is your most important tool**
  - Always think about what you are doing
  - Know where your fingers and other body parts are, and keep them where they belong (and still attached)
  - Be aware of your surroundings

  - No distractions, **focus you must** (put phones away!)
  - Know how to use your tools and how to be safe
  - Use ALL tool safety devices/features and PPE gear !!



- **Some of your projects may require power tools**
  - All power tool usage should be per your own “house rules” with close parental supervision, don’t exceed your comfort level / skills
  - See BSA guidance on dangerous power tools – next slide
  - **Your parents or other adult can use the most wicked tools for you!!**

Use Da Brain. For Life.™

BSA Guide to Safe Scouting Power Tool Guidance (BSA 680-028)

Power Tools

Type of Tool	Youth Up to Age 14	Youth 14 Years and Older	Youth 16 Years and Older
Screwdriver (electric)			
Handheld sander (small)			
Cutting tools (e.g., Dremel®, small)			
Paint sprayer (small, less than 50 psi)			
Belt sander (electric, cordless)			
Circular, reciprocating, jig, or radial saw			Age 18 and older
Band and scroll saws			Age 18 and older
Router/planer			Age 18 and older

Note: Shaded areas indicate age-appropriate use.

Safety First !!
Using Tools for Requirement 6

Pencil

Pointy ouchy pokey part

Write with this end

Ear rest

Erase with this end

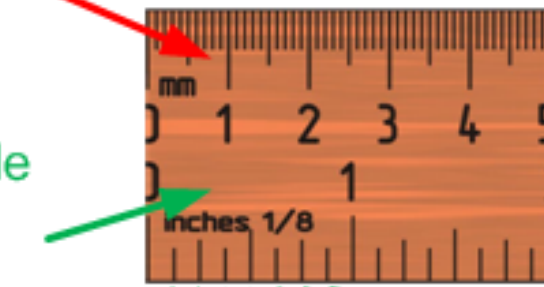
(advanced users only! beware the pointy ouchy pokey part)

Ruler

Confusing wonky metric side (on some rulers)

Nice straighty line maker

Awesome inches side with entertaining weird fractions (8ths, 16ths, 32nds, 64ths, 1029ths - yay!)



1/8" 1/4" 3/8" 1/2" 5/8" 3/4" 7/8"

Tape Measure

Launch the attack button

Snappy backy bitey thingie

Hold here

Scissors

Cutty sharpy pinchy ouchie parts

Hold here

Safety First !!
Using Tools for Requirement 6

Super Glues

Stinky sticky nasty instantly bonding stuff under cap

Squeeze here

Two-Part Epoxies

Stinky sticky stuff under cap

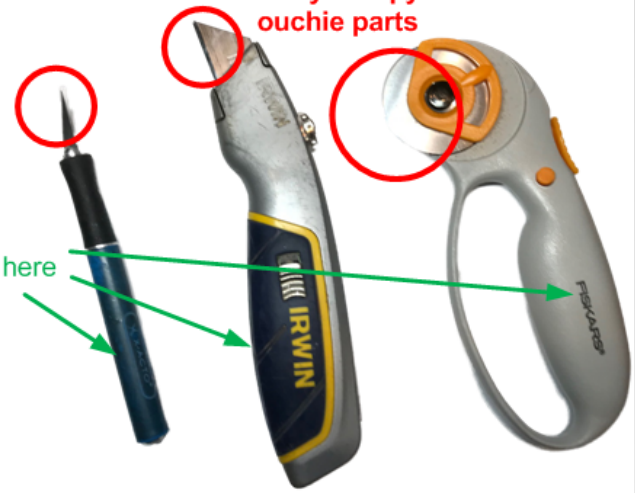
Plastic tray and toothpick for mixing

Pokey ouchy part

Knives

Cutty sharpy ouchie parts

Hold here



Drill / Driver

Loosen bit

Clutch – adjust to set screw depth

Speed control:
1 = drive screws
2 = drill holes

PUSH

Forward/ Reverse

Tighten bit

Trigger

Don't stand it up like this with a bit still in it – lay it down flat !!!

Screws: righty tighty, lefty loosey

Safety: tighten bits by hand, not with the trigger !!

Screwdrivers

Pokey ouchie parts

Straighty (Flat / Slotted)

Wonky Cross (Phillips)

Hold here

Paintbrush

Hold here

Painty varnishy putey onny part

Tip: Wear nitrile gloves to no painty / varnishy your handses

Requirement 6: Safety Gear and Personal Protective Equipment (PPE)

Protected. For Life.™

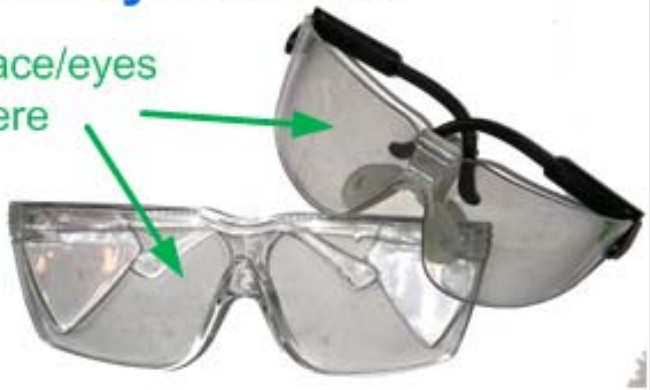
Tool Safety Features and Gear

- **In the previous slides, I showed you several tools with built-in guards, covers, or other protective safety features**
- **Never try to disable, remove, or bypass a tool's safety features**
  - They are there to keep YOU safe
- **In addition to what the tool itself provides, you need to also protect yourself with Personal Protective Equipment (PPE)**
- **Different PPE is required for different tools and different situations**
  - **If you are ever in doubt about if it is needed or not, just use it anyway !!**

Essential Safety and PPE Gear

Safety Glasses

Insert face/eyes here



Chemical Resistant Gloves

Full Face Shield

Insert face here

Breathing and Hearing Protection

Insert nose/mouth here

Roll and insert into ears (the foam things – one per ear, NOT the big plastic ouchy container)

Work Gloves

Insert hands here

First Aid Kit

Requirement 6a:
Paint a wall or ceiling

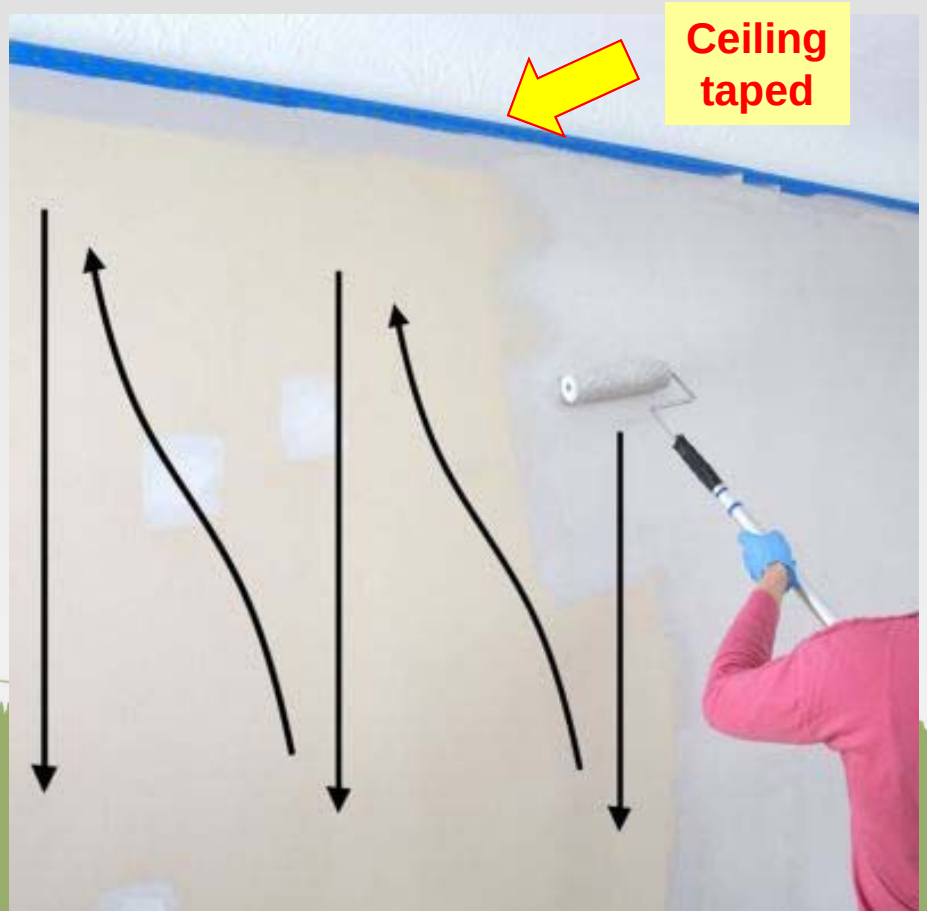
Painting Skills. For Life.™

General painting and varnishing guidelines (3d)

- **Preparation and good practices:**
  - Use a plastic drop cloth to protect the area, tape off areas of your project where you don't want to accidently paint
  - HANDS: Wear gloves for easier clean-up
  - SHOES: Either take shoes off while painting, or clean them off when you finish to make sure there is no paint on the bottoms
  - When finished, clean your brush or "bag it" for another coat later
- **Technique pointers:**
  - Don't dip your whole brush or roller in paint –
    - When rolling, dip a little and then use the ramp in the tray to coat
    - Just dip the tip of your brush in paint, wipe off any excess
  - Apply just enough paint to cover well – several light coats spaced out over time are better than a heavy coat
  - **Keep an eye out for runs and drips in the paint before it dries**

Paint a wall or ceiling (6a)

- **A paint roller is THE best tool for walls and ceilings**
  - Tape and dropcloth first to cover anything you don't want to paint, run an edger first as you go, follow the motion below, and keep a wet edge for best blending



Requirement 6b:
Repair or replace damaged tile, linoleum, or vinyl flooring

Prepared. For Life.™

Repair or replace damaged linoleum or vinyl flooring (6b)

Flooring Fix-Ups

Keeping up what's underfoot helps the overall appearance of a home and the lasting durability of your flooring.

Safety First

- When repairing or replacing vinyl or linoleum flooring, have an expert check the existing materials to make sure that they don't contain asbestos.
- Keep your working area well-ventilated; adhesives, sealers, and adhesive solvents may contain harmful fumes.

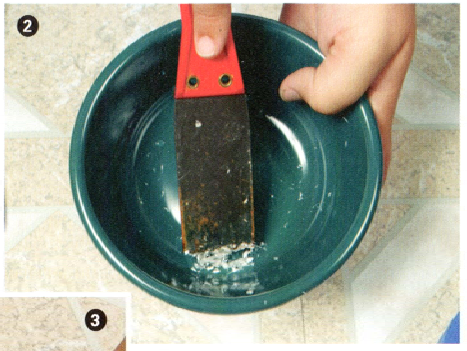
Repairing Vinyl Flooring

Vinyl flooring is available in sheets and tiles. Chemical seam sealers are available for some flooring materials; be sure you purchase the correct kind for your flooring.

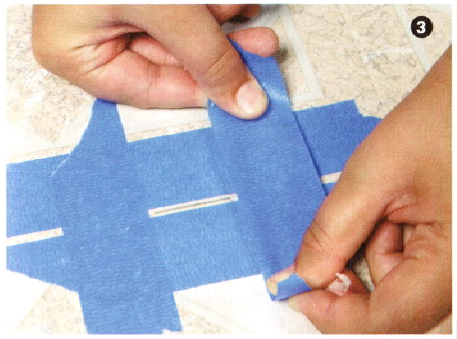
Filling Scratches and Dents

Scratches and dents in vinyl flooring can be filled using a paste made with shavings from a scrap piece or extra tile.

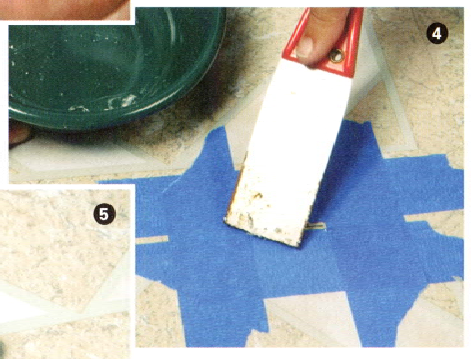
Step 1—Scrape the surface of the extra flooring piece with a notched blade to make a powder.



Step 2—Mix the powder with a clear, quick-drying varnish or lacquer.



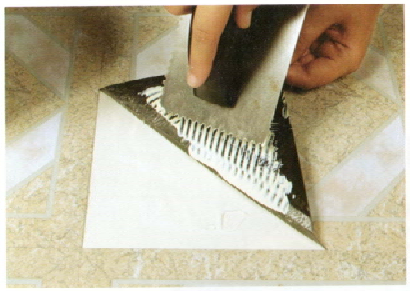
Step 3—Surround the scratch or dent with masking tape to protect the undamaged floor.



Step 4—Trowel the mixture into the scratch with a putty knife so that it is level with the floor surface. Let it dry.

Step 5—Buff the surface with fine steel wool and boiled linseed oil.

Repair or replace damaged linoleum or vinyl flooring (6b)



Flattening Curled Tiles

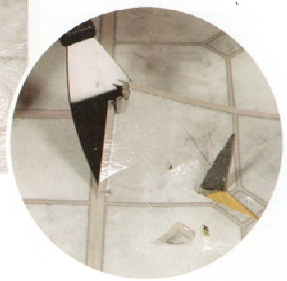
Vinyl tiles sometimes curl at the edges, but you may be able to iron them flat again. First, cover the tiles with paper towels and heat using a *warm*—not hot—iron. Heat often reactivates the original adhesive. Once the tiles are flattened, cover the seams with foil or waxed paper, and weight down the tiles overnight.

If the tiles recurl, heat them again with a warm iron and then gently lift the curled edges and apply new adhesive. Press the tiles back into place and apply seam sealer. Cover the seams with foil or waxed paper and weight them down overnight.

Replacing Damaged Tiles

Replace damaged vinyl tiles square by square.

Step 1—Heat the damaged squares with a hair dryer to loosen the adhesive, and then lift them out with a putty knife or chisel. Be careful not to damage the edges of the adjoining tiles.



Step 2—Remove all old adhesive from the subflooring with the putty knife or chisel.

Step 3—Place the new tile in the opening, matching the pattern and trimming the new tile to fit.

Step 4—Apply the recommended adhesive to the floor. Warm the new tile with an iron or blow dryer and set it in place.

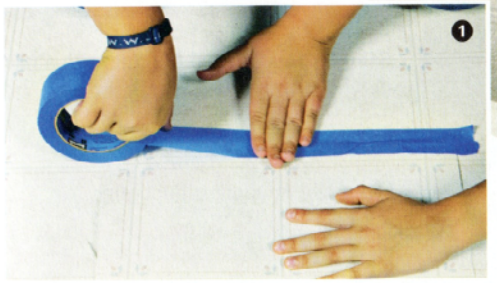
Step 5—Cover the new tile with foil or waxed paper and weight it down overnight.

Repair or replace damaged sheet flooring (6b)

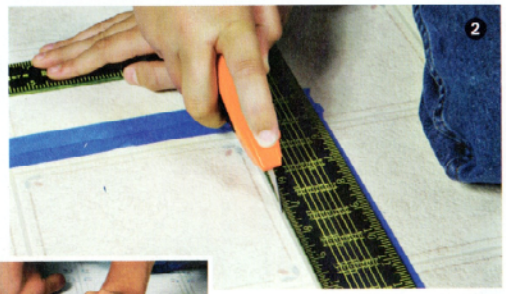
Patching Sheet Flooring

Here's how to replace a worn spot in sheet flooring:

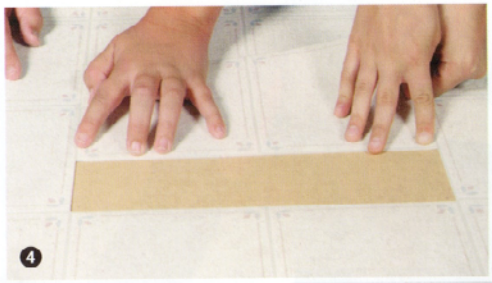
Step 1—Cut a new piece of flooring that is larger than the damaged area. Match the pattern exactly and tape the new flooring in place.



Step 2—Use a sharp knife and carpenter's square to cut through both the patch and the old flooring. Remove the new patch and the surrounding scraps.

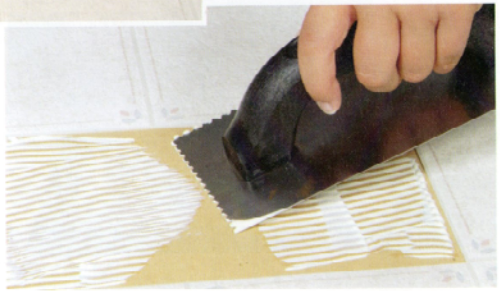


Step 3—Heat the old flooring with a hair dryer to loosen the adhesive. Remove the damaged area, working from the worn area to the edges. Be careful not to damage the edge of the patch area. Clean the old adhesive from the subflooring.



Step 4—Check the fit of the patch and trim it, if necessary. Apply adhesive to the subflooring and insert the patch. If seam sealer is available for that type of flooring, apply it to the edges.

Step 5 – Place weight over it and cover overnight



Requirement 6c:
Install drapery or curtain rods and then hang drapes or curtains

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Install drapery or curtain rods and then hang drapes or curtains (6c)

- **Curtain Basics**

Curtain Basics

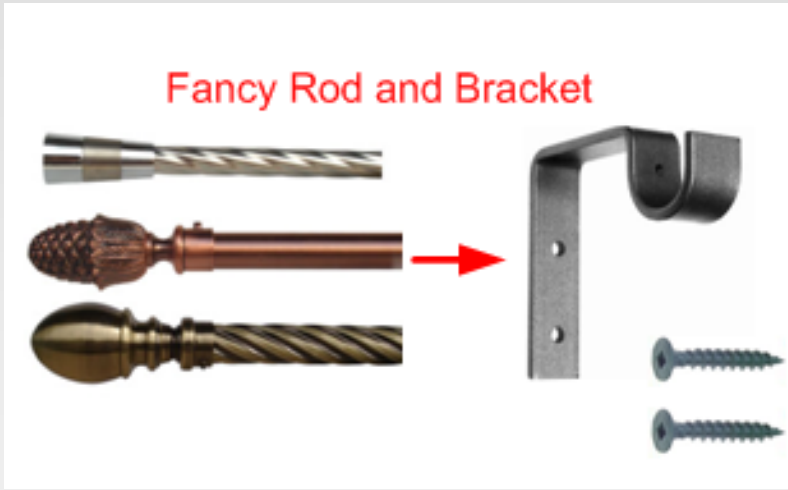
- There are many styles of curtains, but they share some common parts: curtain panels, valance, tie-backs, rods, and rod brackets

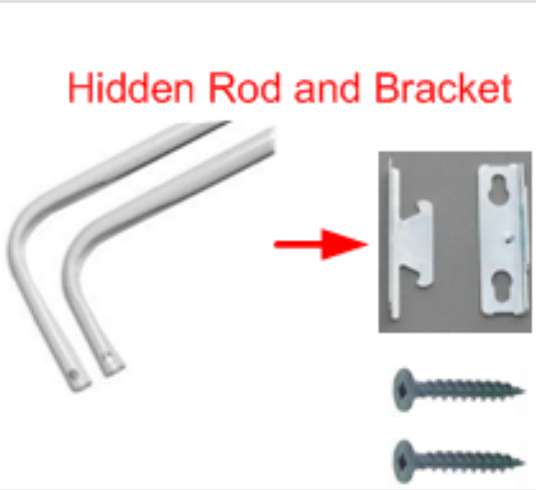
Fancy Curtain Rods

Curtain Parts

Install drapery or curtain rods and then hang drapes or curtains (6c)

- **Typical Curtain Rod Types and Mounting Hardware**

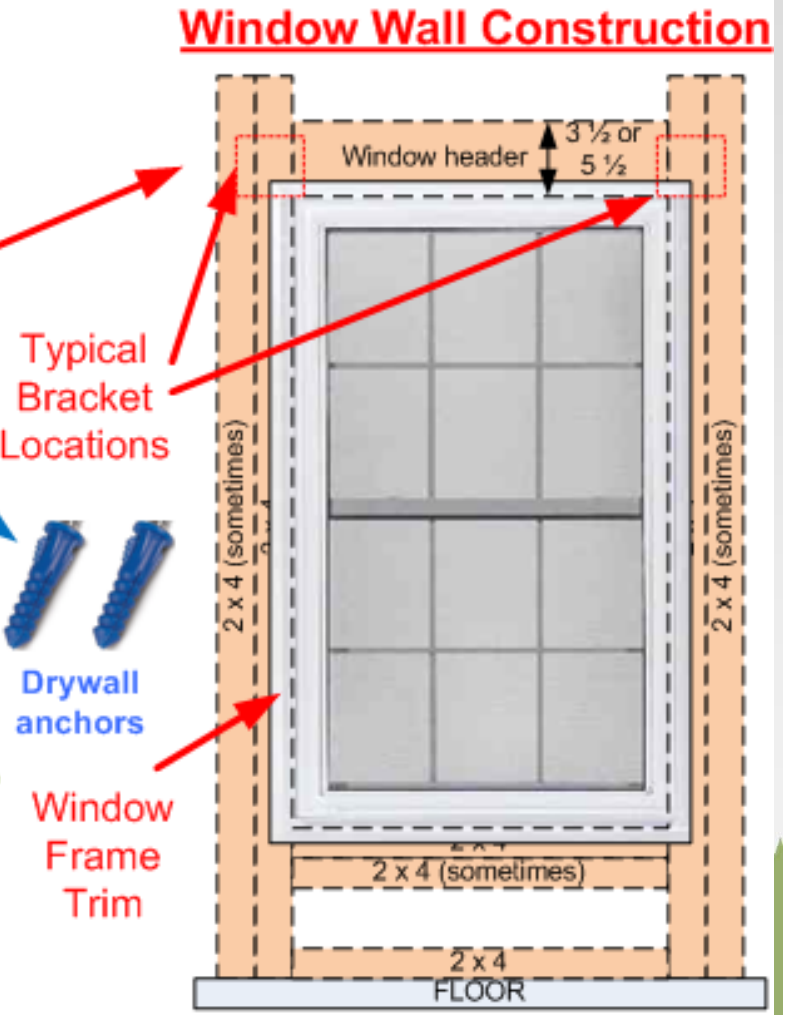




Install drapery or curtain rods and then hang drapes or curtains (6c)

Planning the Installation

- Curtain rod brackets must be mounted at the top sides of the window frame, and wide or heavy curtains must also have a center support bracket
- Note the typical window wall construction to see where you can expect to find 2x4 wall studs within the wall for mounting
- If you don't hit a wall stud, you will need to use drywall anchors to mount the rod bracket
- Guidelines for hanging curtains:
  - Choose the length of curtain by the height of the window and how close you want it to come to the floor
  - Curtain rods should be mounted so that the curtains will cover the tops and sides of the window frame trim
  - Check the top of the window frame to make sure it is level, you can then use it as reference for mounting brackets
  - Depending on the rod type, the brackets are usually mounted an inch or two from the window frame sides, usually slightly above the window frame top
  - After mounting the brackets, slide the curtain on the rod and hang on brackets, then fluff to spread it out



Requirement 6d:
Replace window blind cords

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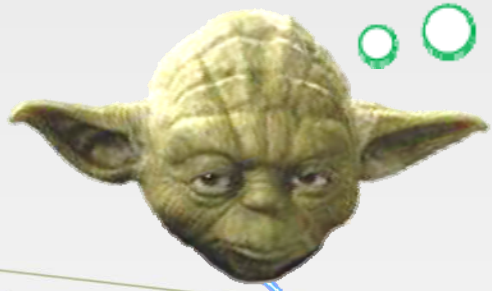
Requirement 6e:
Repair or replace a window sash cord



Most modern windows have these do not. Tough this may be.

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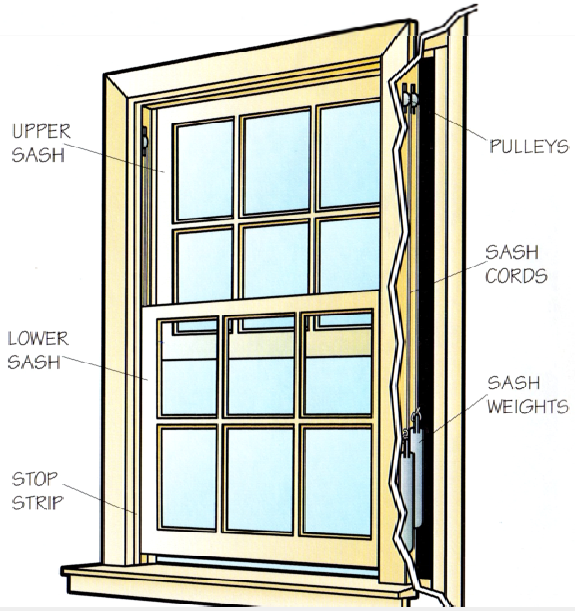
Repair or replace a window sash cord (6e)

- **Old school windows have a sash cord that may need replaced, use a sash chain if you can. Here are the instructions from the pamphlet:**

Step 1—Raise the lower sash of the window. With a wide, thick pry bar, pry out the stop strip on both sides of the window and lift the lower sash out of the window frame.

Step 2—Remove the cover to the weight pocket by unscrewing its screws. If necessary, pry off the cover with a chisel. Take the weight out of the weight pocket and remove the old cord.

Step 3—Add about a foot to the total length of the old cord and cut a new cord (or chain) to this length.



Step 4—Push the new cord over the pulley and connect it to the sash. If the cord sticks, tie a small fishing sinker to a string, attach it to the cord, and then drop the sinker over the pulley.

Step 5—Remove the sinker and attach the end of the cord to the sash weight. If you are replacing the cord with a chain, loop the chain through the hole in the weight and bind it tightly with wire. Put the weight into the weight pocket.

Step 6—Replace the pocket cover, then place the sash in the sill. Pull the weight as high as it will go. Cut the cord or chain 4 inches below the hole in the edge of the sash.

Step 7—Tie an overhand knot in the cut end of the cord, fit the knot into the hole in the edge of the sash, and release the slack. The cord will lie in the channel of the sash. If you have used a chain, secure it in the slot with two ¾-inch wood screws fastened through separate links of the chain.

Step 8—Replace the sash in the window frame and nail the stops back on.

Requirement 6f:
Reinforce a picture frame

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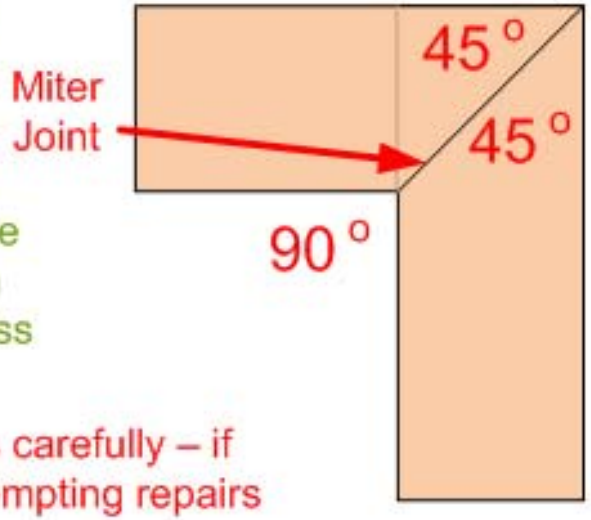
Reinforce a picture frame (6f)

- **Picture frames can loosen over time and may need to be repaired before the picture is damaged**

Picture Frame Construction

- There are many styles of picture frames, but most are made with mitered corners
- As wood expands and contracts, the miter joints can become loose or even fail, which could result in damage or injury from falling glass



Handle picture frame glass carefully – if possible, remove before attempting repairs

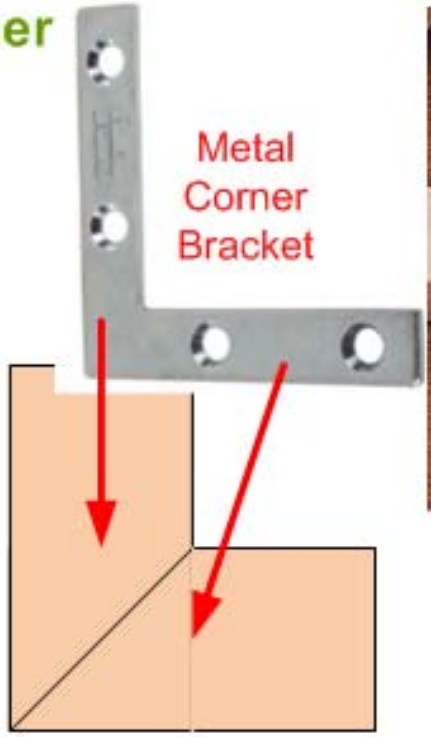
Example of Fine Art

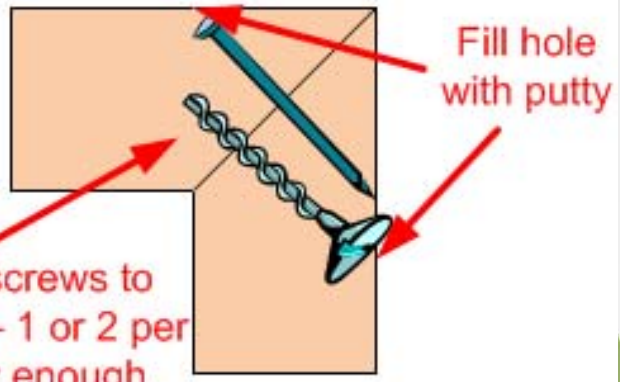
Fine Art. For Life.™

Reinforce a picture frame (6f)

Reinforcing a Picture Frame Corner

- There are several methods to reinforcing picture frame corners, including brackets, nails, screws, and special connectors
- We will use metal corner brackets in each corner to reinforce our frames
- Step 1: Hold the corner tightly and drill two pilot holes for one side of bracket
- Step 2: Insert and tighten two screws, then hold corner tightly and drill two pilot holes for the other side of bracket
- Step 3: Insert and tighten two screws in other side of bracket
- Doing ½ of bracket at a time lets you get the joint as tight as possible





Using nails OR screws to reinforce corners – 1 or 2 per corner is usually enough

Mr. Eric Bonus !!
Hanging a Picture

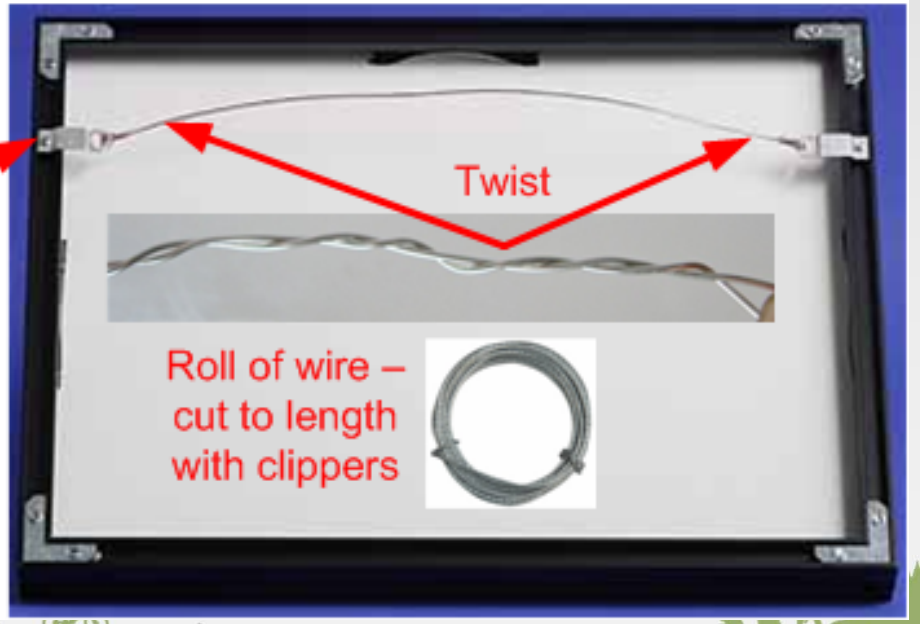
- **There are several ways to hang a picture, but hanger wire is my favorite as you can hide all the mounting hardware behind the picture**

- The best way to hang pictures is to use picture hanger wire
- Insert hanger loops, screws, or screw eyes about 1/4 to 1/3 down from top of frame
- Twist the hanger wire around connection on each side then wrap several times around itself, leaving room at top for wall-mounted picture hanger

Wall-mounted picture hanger

OR

Using picture hanger wire



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Requirement 6g:
Mend an object made of china, glass, or pottery

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Mend an object made of china, glass, or pottery (6g)

- China, glass, and pottery items are fragile and often accidently break
- For this requirement, you can either repair something that is already broken, or break something (get parental permission first, duh!) and then repair it !! **Example: break a cheap flower pot in a Ziploc bag !**

Prepare your repair

- Lay out all broken pieces to make sure you have them all and that you know where they fit
- Pick the best glue for your object material
  - Small repairs should use 5-minute epoxy or super glue
  - Large repairs should use slow-setting epoxy
  - Food contact items require special food-safe glues
- Work in small steps to re-build the broken object
- Use tape or clay to help hold the parts together while they dry, let the object dry thoroughly

Smash Stuff. For Life.™

Mend an object made of china, glass, or pottery (6g)

Repairing a Broken Pottery Plate – Step by Step

Note: we will use super-glue instead of two-part epoxy – be careful not to let the glue get on your skin as it can bond instantly

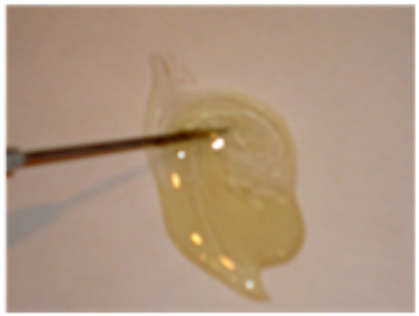
Wear rubber gloves

Align broken pieces

Select your glue (we will use super-glue)

For epoxy, squeeze out equal amounts

For epoxy, replace the cap tightly



For epoxy, mix two parts together thoroughly

Apply glue to one side of repair

Line-up pieces and push together tightly

Mend an object made of china, glass, or pottery (6g)

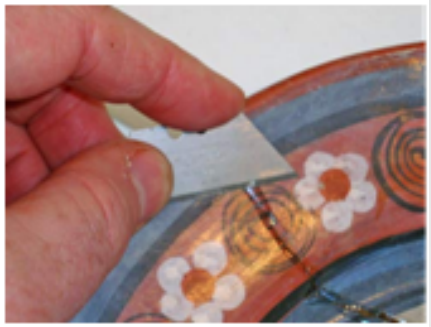
Repairing a Broken Pottery Plate – Step by Step, con't

Note: we will use super-glue instead of two-part epoxy – be careful not to let the glue get on your skin as it can bond instantly

Use clay on bottom to support object

Use clay or painter's tape to hold pieces together

Wait 24 hours before cleaning or handling



Scrape off dried glue with blade

Pictures and steps from www.lakesidepottery.com

Wrapping up the Home Repairs Merit Badge

Totally got this, you do !! Have your back Mr. Eric does !! Yes !!

Home Repairs. For Life.™

Earning this Merit Badge with Mr. Eric – 1/6

- **You must attend all online sessions**
  - If you need to miss one, OR if you logged in with buddies on a single computer, email me (CC your parents!)
- **There will be 14 projects (the minimum required) for you to complete outside of class**
  - For these, I will have suggestions, but you can pick something else with my approval first
  - You can't use something you have not done SEMI-recently (i.e. from before your SM gave you approval to take this class),

    BUT
    - If you did something during the COVID shutdown, do you have evidence?
    - I am willing to negotiate on these !!!

Earning this Merit Badge with Mr. Eric – 2/6

- **Note that none of the project requirements say it has to be done in YOUR house!!!**
  - You can use this badge to help out a neighbor, family member, or friend at THEIR house !!
  - You can also do the work at your school, church, chartered organization, or somewhere in your community
  - A Scout is Helpful !!!

- **If you are working outside of your own house, be sure to follow COVID-19 guidelines!**

Earning this Merit Badge with Mr. Eric – 3/6

- **Working as a team is OK !!!**
  - I have several siblings, friends or Patrols taking this class together.
  - I am fine with you working on projects together as a team, but you each will need to be sure to share equally in the work and be able to explain to me what YOU did with your team on each project.
- **Your projects MUST match the (IMO overly specific) requirements, there is no wiggle room**
  - If you want to negotiate something, email me to discuss (CC your parents!)
- **Bottom line: Keep me in the loop**

Earning this Merit Badge with Mr. Eric – 4/6

- **Since there are so many projects, I did NOT give any other homework**
- **You will have 14 projects to do at home at your own pace which you must document for me with pictures**
- **Here are the rules for pictures:**
  - I love pictures with Scouts in them, but you cannot wear name badges or hold signs that show your complete name, address, email or anything else that can be used to identify you – first names only please (first letter of last name is OK too if you want)
  - I may show your pictures as “do it this way” examples during our online sessions, I will never use them as “don’t do it this way”

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Earning this Merit Badge with Mr. Eric – 5/6

- **You will have to email me your completed workbook and project photos**
- **My email is: ericcutright@comcast.net**
- **Per YPT rules, you must copy at least one parent on all emails to me**
  - Once I get an email from you, I will respond with a copy to your parent(s)
  - If you don't get a quick reply from me, you probably forgot to copy a parent so I can't respond – double check what you sent

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Earning this Merit Badge with Mr. Eric – 6/6

- **This is a NO BLUE CARD online class, when you complete the MB, you get credit 1 of 2 ways**
  - If Scoutbook cooperates, your parent or SM can connect to me as your MBC and I can sign you off when you are finished, OR
  - I will send you (and a parent) an email stating that you have completed the MB which you can then give to your SM / AC
  - Really need a silly little Blue Card? Email me (CC a parent)
- **But dude, what if I don't finish this week?**
  - You have until age 18 to finish - I'm happy to help you, but…
  - If you don't finish, let me sign you off on whatever you completed SOON so that YOU and I have a record of what you finished
  - You can then finish with me OR any other Home Repairs MBC

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The End !!

Yoda. For Life.™