

まんがでわかる



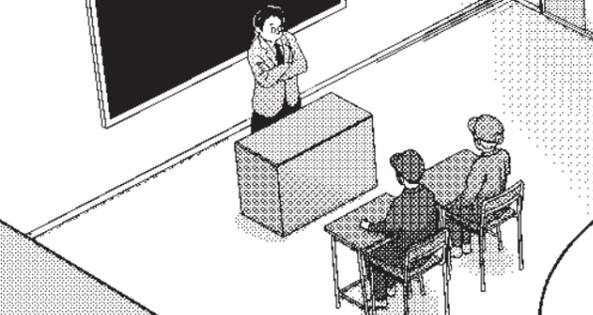
English
英語

塗装の安全衛生

Learn Through Manga
Safety and Health in Painting Work



These audiovisual materials have been prepared for the purpose of teaching the basics of safety and health for all workers engaged in painting work.

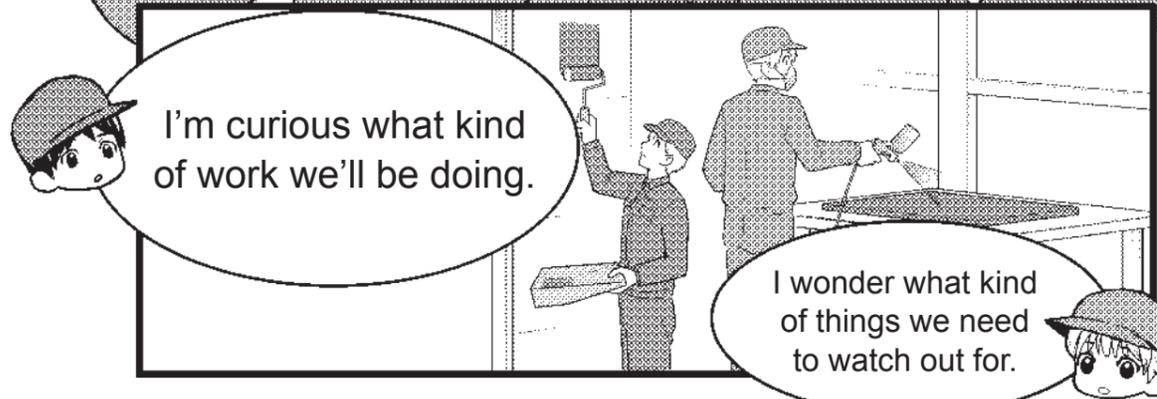


Today, let's learn about safety and health for painting work at construction sites and factories!



Some work at construction sites is done in high up places, and painting also involves handling organic solvents, so you have to be careful about safety.

That's right!



I'm curious what kind of work we'll be doing.

I wonder what kind of things we need to watch out for.



Industrial accidents happen even in such workplaces.

Huh!?

The main causes of industrial accidents are listed here.

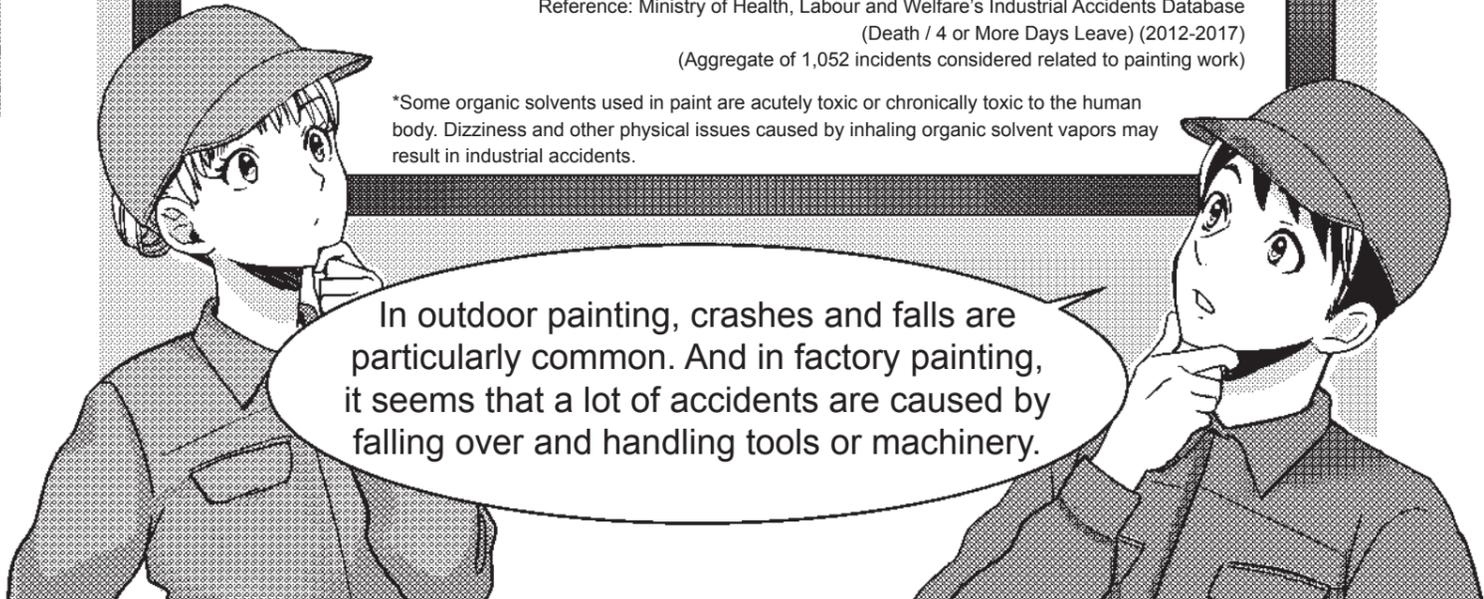


Rate of Deaths and Injuries in Painting Work

		Outdoor painting	Factory painting
1	Crashes and falls	66 %	17 %
2	Falling over	7 %	12 %
3	Getting caught/trapped	2 %	18 %
4	Recoil/forced movement	6 %	9 %
5	Flying/falling objects	4 %	12 %

Reference: Ministry of Health, Labour and Welfare's Industrial Accidents Database (Death / 4 or More Days Leave) (2012-2017) (Aggregate of 1,052 incidents considered related to painting work)

*Some organic solvents used in paint are acutely toxic or chronically toxic to the human body. Dizziness and other physical issues caused by inhaling organic solvent vapors may result in industrial accidents.



In outdoor painting, crashes and falls are particularly common. And in factory painting, it seems that a lot of accidents are caused by falling over and handling tools or machinery.

That's right.

Next, let's take a look at specific causes of industrial accidents!

For example, there are reports of cases where workers slip and fall,



or feel sick from inhaling the vapors of organic solvents used in paint and paint thinners.

Cases of Organic Solvent Poisoning

- ① Chapped red hands
- ② Abnormal tiredness and weakness in the legs
- ③ Headache, head pain, dizziness
- ④ Frustration, insomnia, bad dreams
- ⑤ Heavy stomach, loss of appetite, etc.



How come industrial accidents like this happen?

Mainly because the rules meant to ensure safety and health weren't followed.

What kind of rules are there for example?

Predicting hazards and performing on-site safety checks before starting work. It's also important to always wear and use fall protection equipment, gas masks, and other personal protective equipment correctly.

Is that it?

I thought there would be more complicated rules than that.

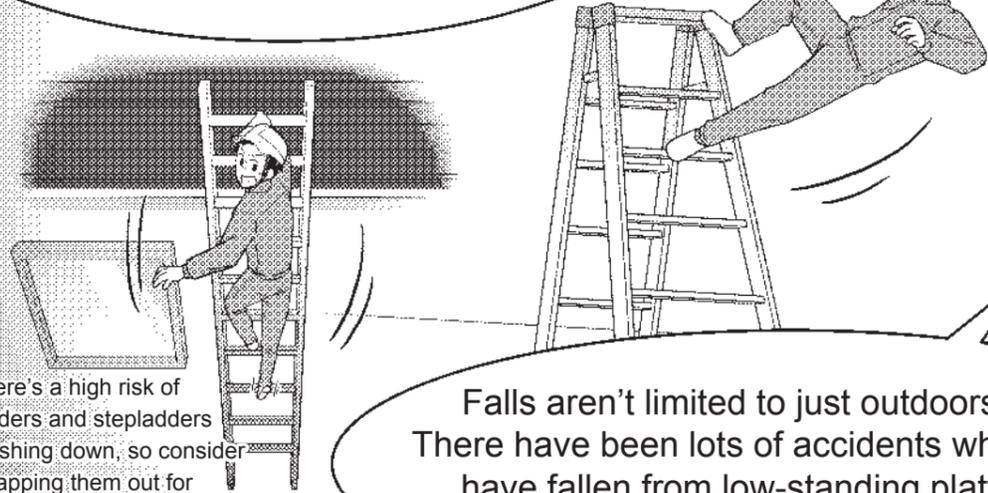
Huh?

It's important to enforce the rules thoroughly to prevent industrial accidents!

Ye, yes sir!

Uhh...

You have to be extra careful about falling from high up places. You could get seriously injured and be unable to work, or you might even lose your life. There have been instances of workers dying from falls of less than 1m.



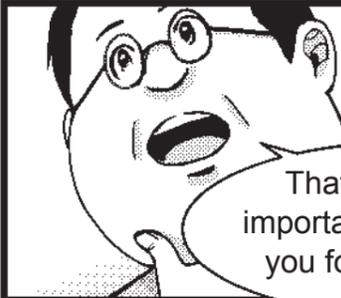
There's a high risk of ladders and stepladders crashing down, so consider swapping them out for mobile scaffolding or portable work platforms.

Falls aren't limited to just outdoors, either. There have been lots of accidents where people have fallen from low-standing platforms of just 2 or 3 steps, even in factories.

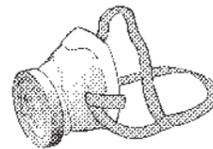
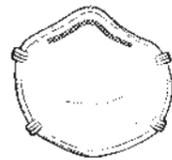
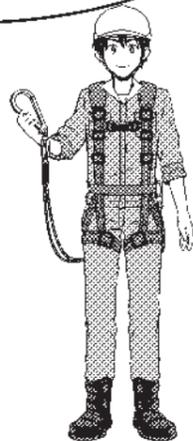
This work is done side by side with danger, isn't it?



That's why it's so important to make sure you follow the rules.



To prevent falls, it's important to wear fall protection equipment.



And to protect yourself from organic solvents, it's especially important to wear a gas mask. Pick the right type for the job and wear it correctly.

What kind of things do we need to watch out for on a regular basis?



Do you know about 4S?



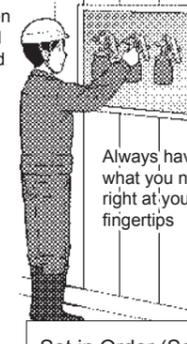
4S forms the basis of safety and health: Sorting, Set in order, Shine, and Standardize. It's also important to consider what kind of hazards could be lurking around site.

Distinguish between what you need and what you don't, and discard what you don't



Sorting (Seiri)

Always have what you need right at your fingertips



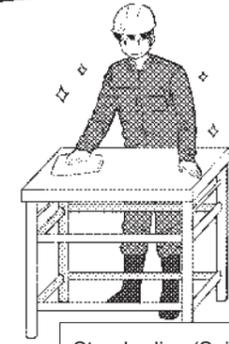
Set in Order (Seiton)

Keep clean by clearing trash and dirt



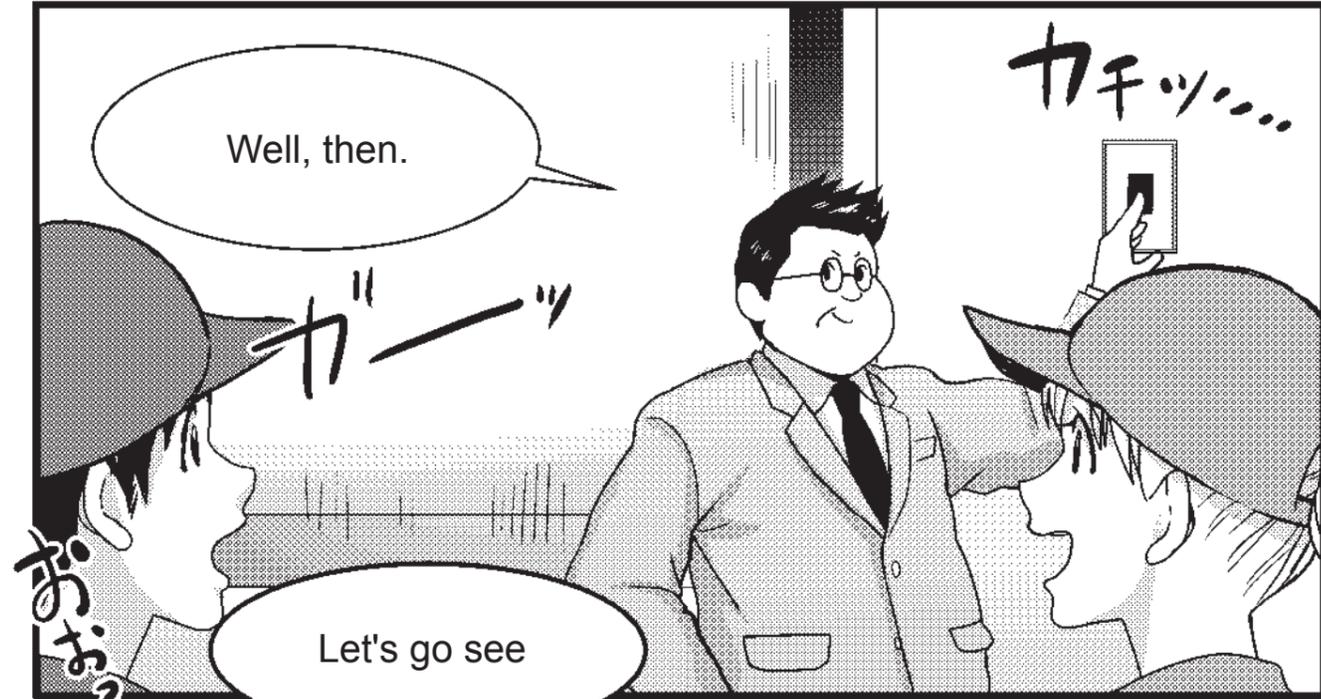
Shine (Seiso)

Maintain cleanliness and keep yourself, your clothes, and your surroundings spotless



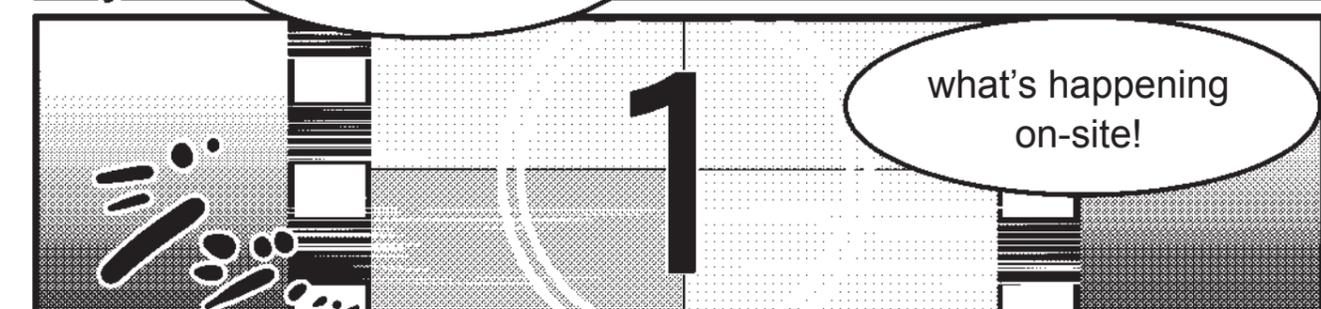
Standardize (Seiketsu)

Well, then.



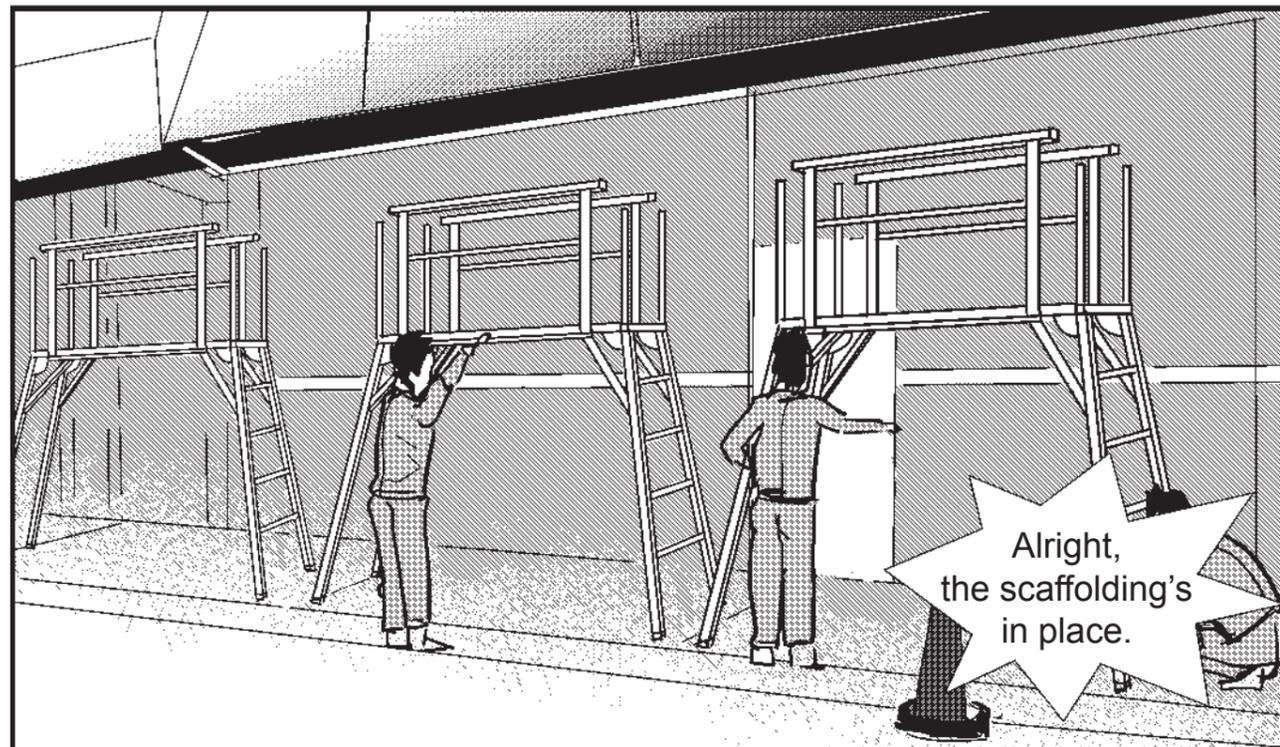
Let's go see

what's happening on-site!



CASE 1

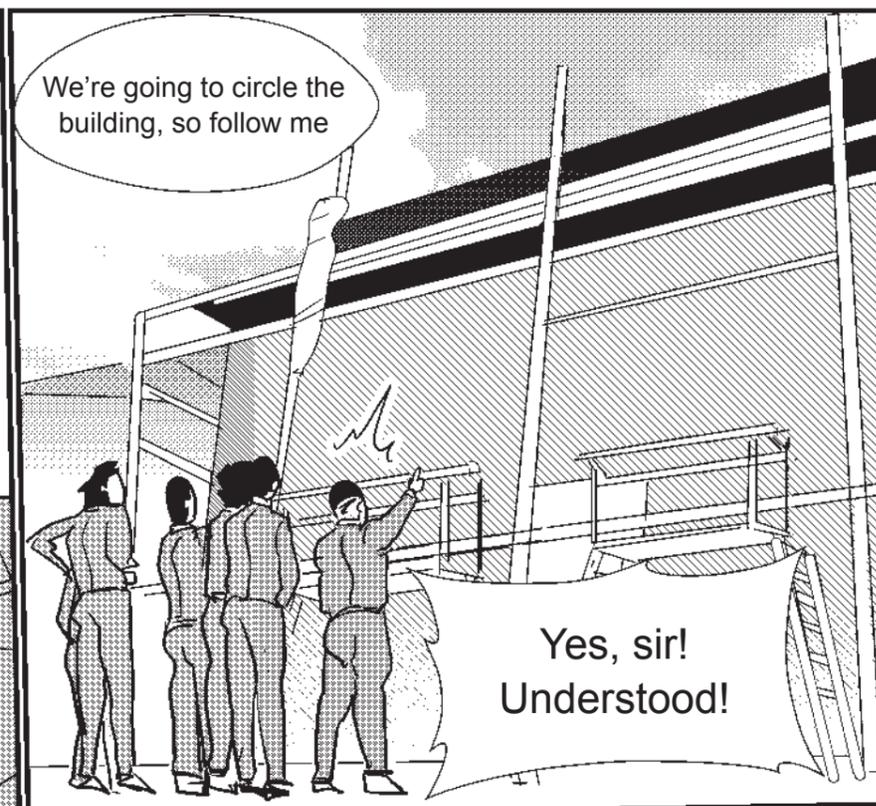
Be careful with scaffolding



Alright, the scaffolding's in place.



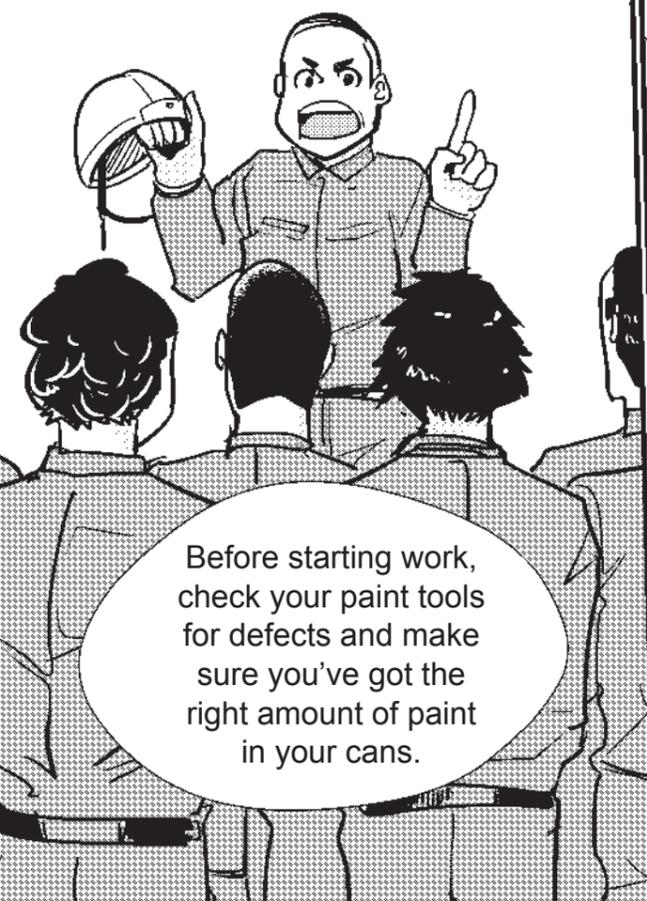
Now we're going to see the areas we'll be painting and which may be dangerous!



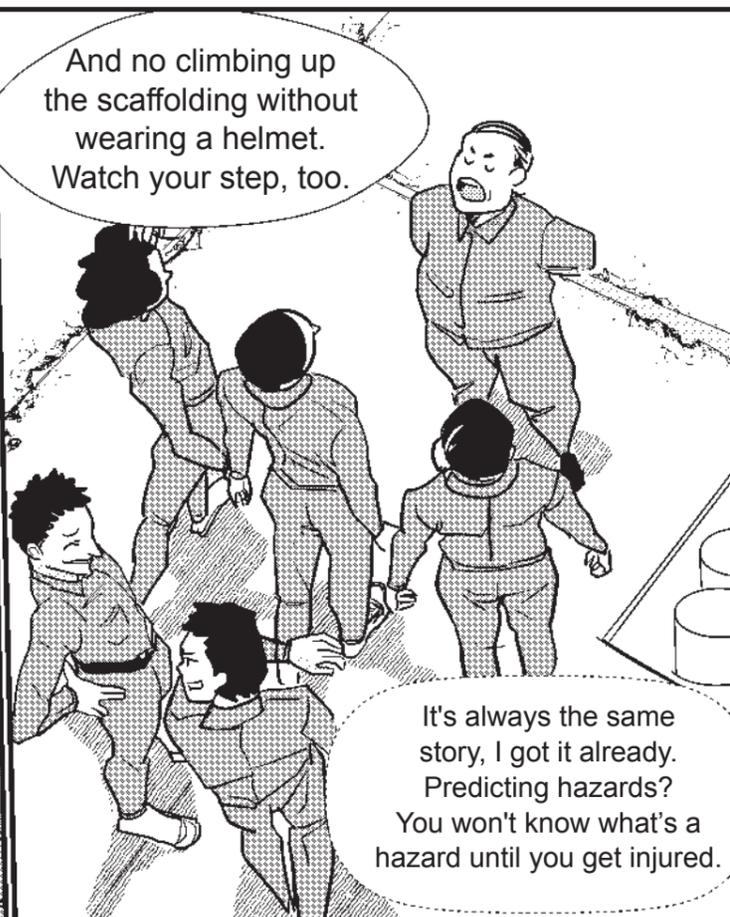
We're going to circle the building, so follow me

Yes, sir! Understood!

Morning Hazard Prediction (KY) Meeting



Before starting work, check your paint tools for defects and make sure you've got the right amount of paint in your cans.



And no climbing up the scaffolding without wearing a helmet. Watch your step, too.

It's always the same story, I got it already. Predicting hazards? You won't know what's a hazard until you get injured.



Put your helmet on properly.



Alright, let's start work!

KY meetings are done to heighten workers' safety awareness of hazards (Kiken) by predicting (Yochi) which may be associated with a task.



Oh, somebody's calling me.



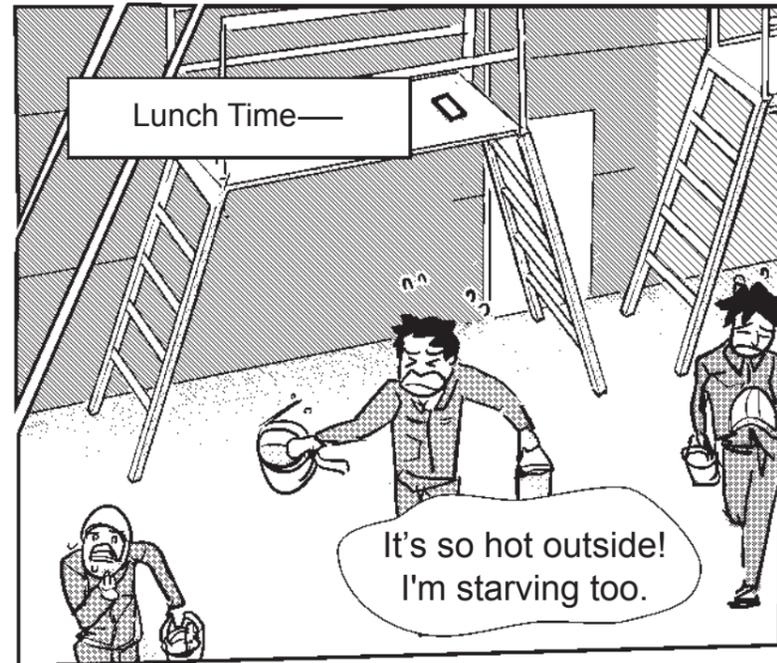
Hi, senpai. Thanks for your hard work today.



The new paint tools? I packed them up in the back of the warehouse.



It's such a hassle taking my phone out every single time I get a call. Let me just put it here.



Lunch Time—

It's so hot outside! I'm starving too.



Oh!? My cell phone's ringing.



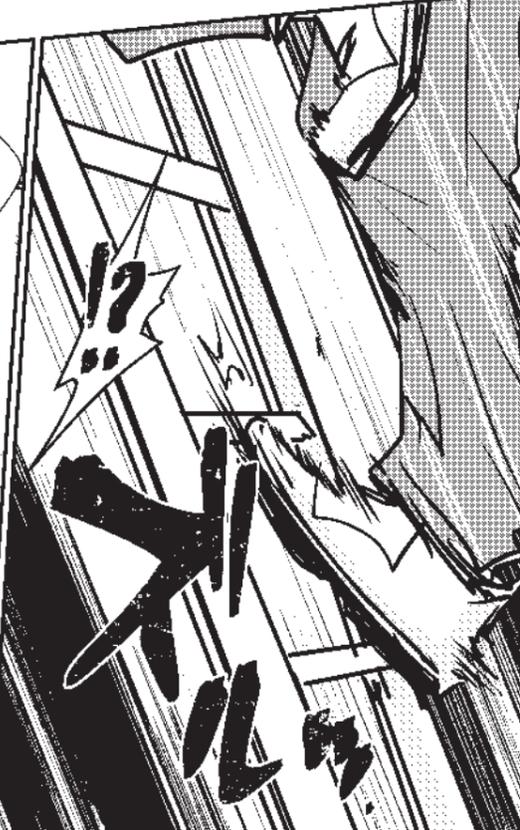
I left it on the scaffolding.



Yes sir, I understand. I'll head there right away.



Let's hurry down.



Wahhhh!!



A broken leg

and 8 stitches in your head, huh?

The reason we warn you repeatedly about the same things at the KY meetings is because if you don't follow the rules, you'll get hurt.

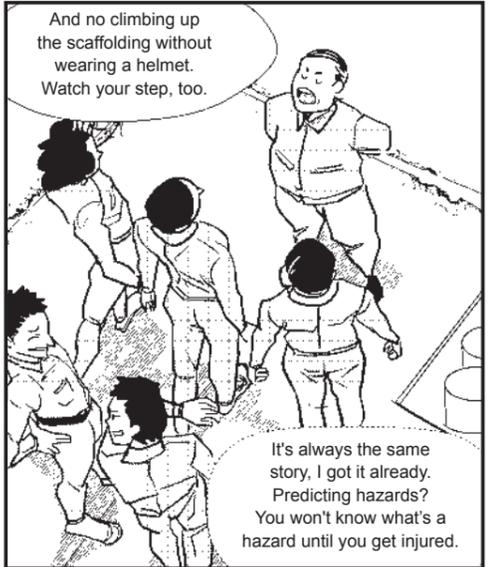
Yes sir, I understand.

Even if you're in a hurry, wear your helmet. Accidents are more likely to occur when you're rushing or when you're unfamiliar with a task. And watch out for your step carefully.

The worker learned the importance of KY meetings and following the rules the hard way.

CASE 1 Summary

1 Listen carefully to precautions!



And no climbing up the scaffolding without wearing a helmet. Watch your step, too.

It's always the same story, I got it already. Predicting hazards? You won't know what's a hazard until you get injured.

Listen carefully to the precautions given during morning assemblies and meetings and make an effort to prevent industrial accidents. Also, understand the dangers of paint and paint thinner.

2 Watch your step when moving about!

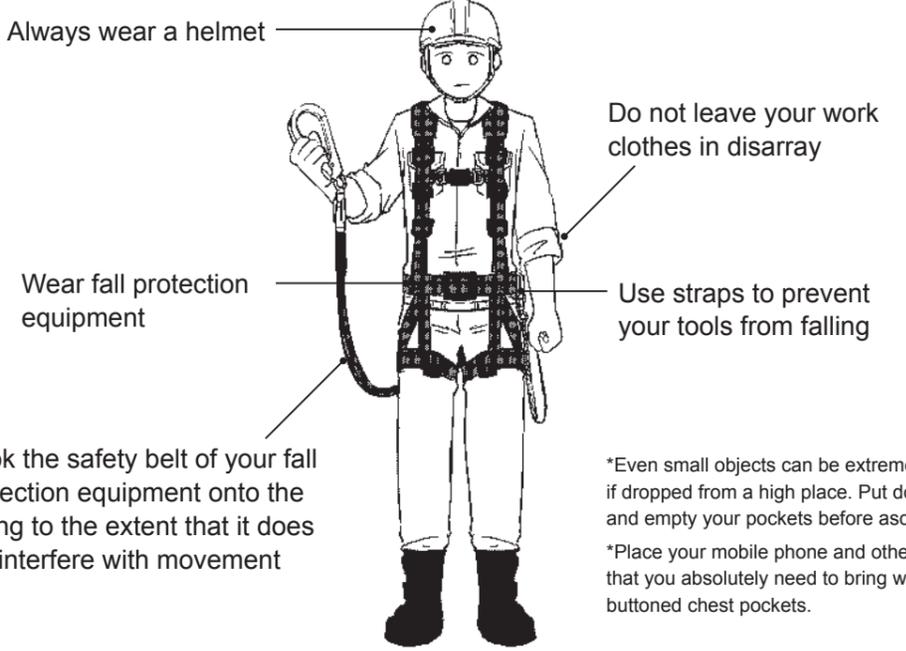


Hi, senpai. Thanks for your hard work today.

Wahhhh!!

Be careful of your step when climbing up and down scaffolding. Remember that accidents are more likely to occur when you are in a hurry or doing non-routine tasks.

TIPS Do not go onto scaffolding without fall protection equipment and other protective equipment when working up 2m or higher!



Always wear a helmet

Do not leave your work clothes in disarray

Wear fall protection equipment

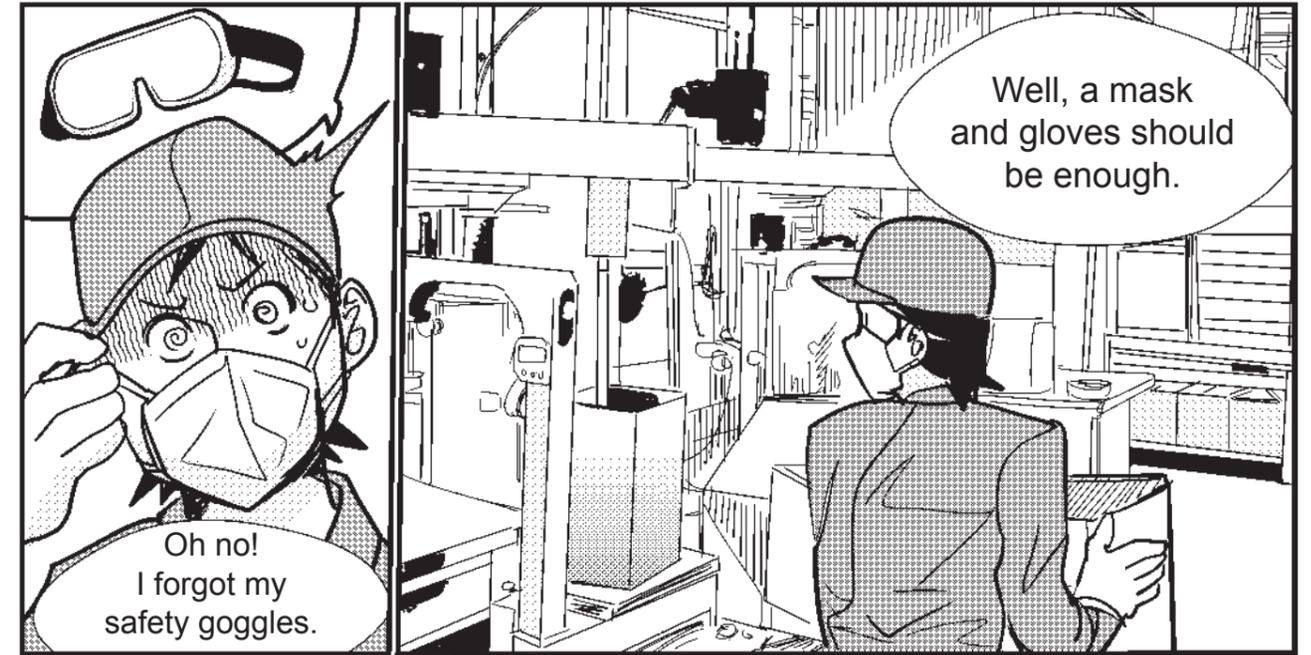
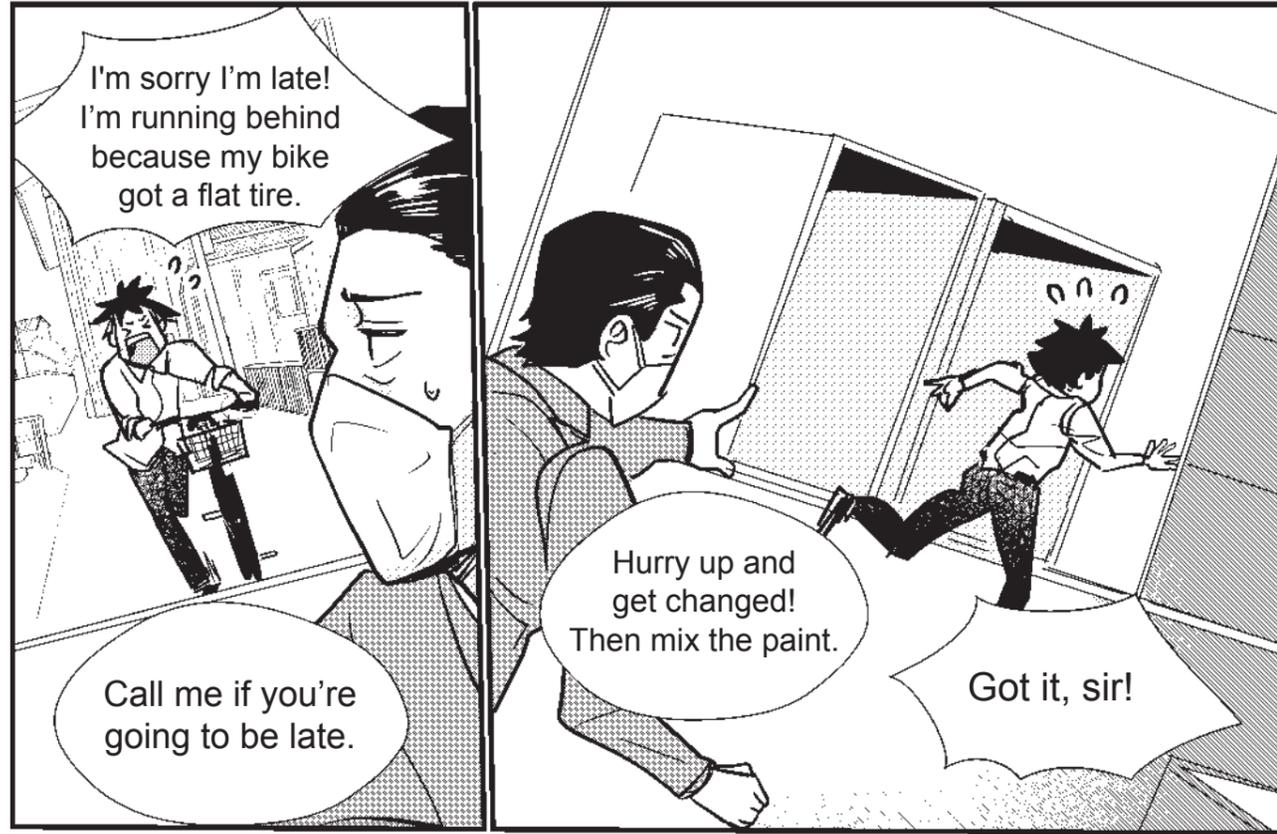
Use straps to prevent your tools from falling

Hook the safety belt of your fall protection equipment onto the railing to the extent that it does not interfere with movement

*Even small objects can be extremely dangerous if dropped from a high place. Put down your pens and empty your pockets before ascending.
*Place your mobile phone and other small items that you absolutely need to bring with you in your buttoned chest pockets.

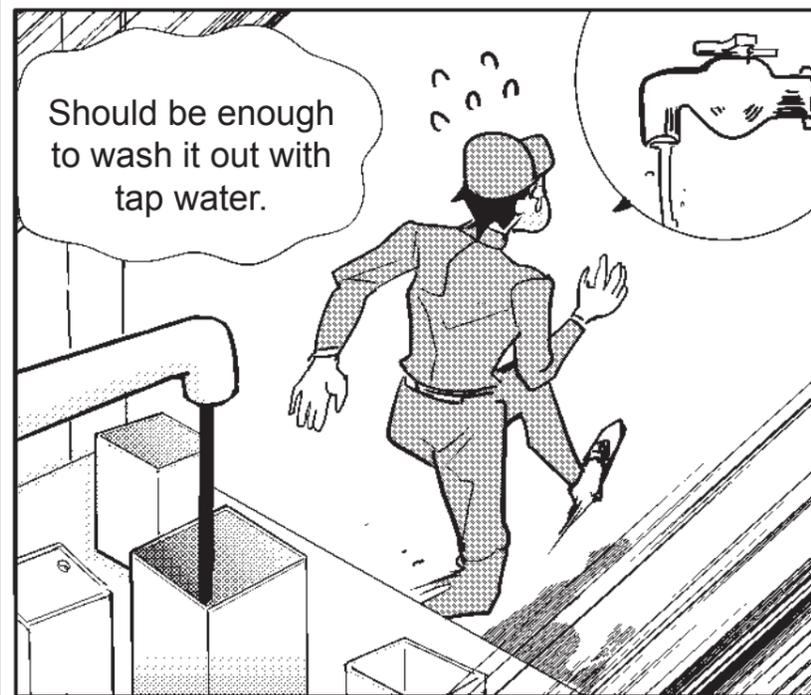
CASE 2

Put on protective equipment





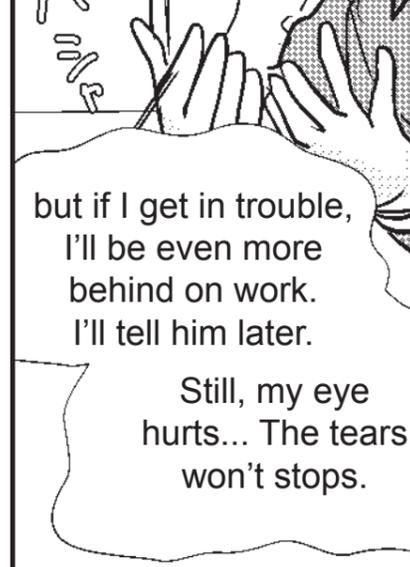
Whoa!
Paint thinner
splashed
into my eye!



Should be enough
to wash it out with
tap water.

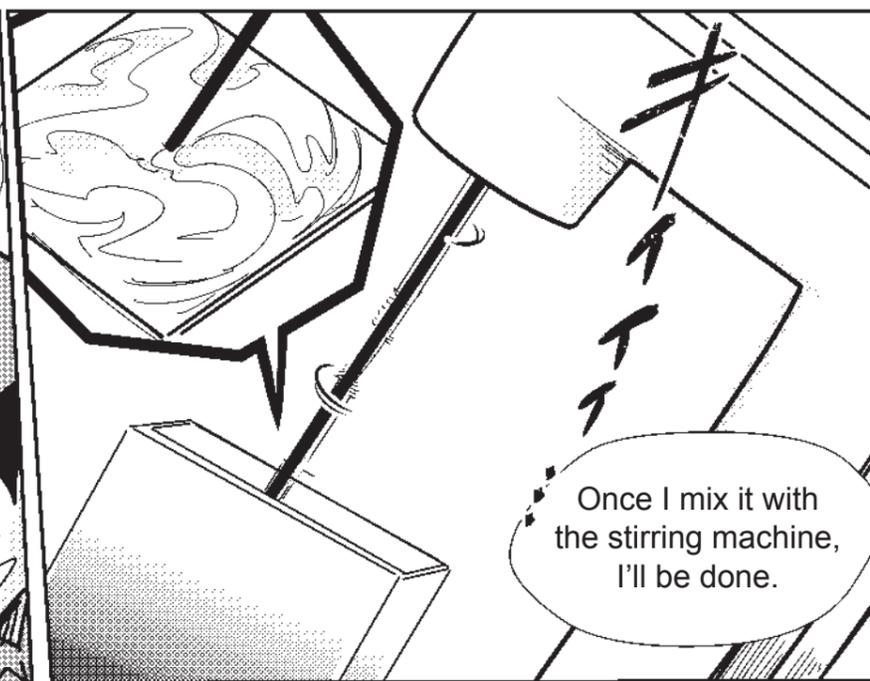


The rule is
to report it to
your supervisor
right away,



but if I get in trouble,
I'll be even more
behind on work.
I'll tell him later.

Still, my eye
hurts... The tears
won't stop.



Once I mix it with
the stirring machine,
I'll be done.



Next up
is painting!



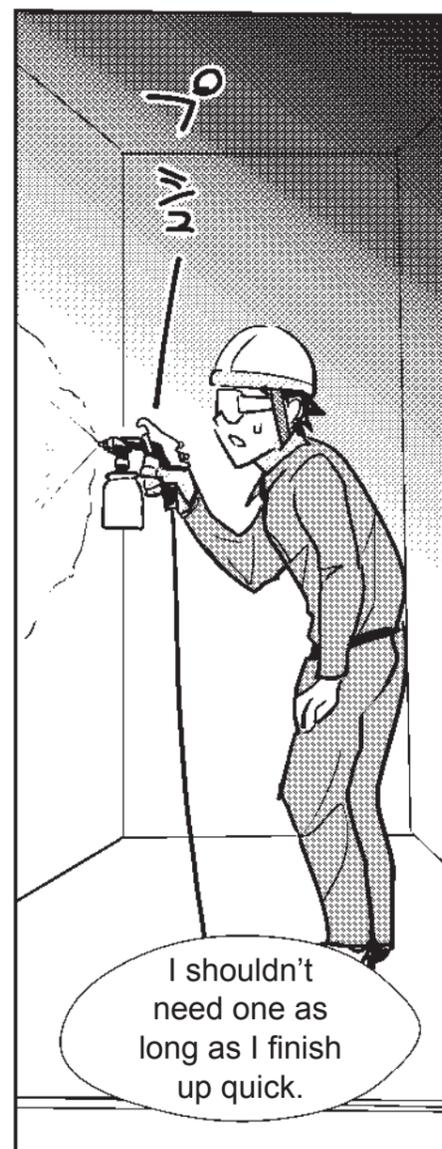
Painting Area

I've got my helmet,
safety goggles, and
chemical resistant
gloves on.

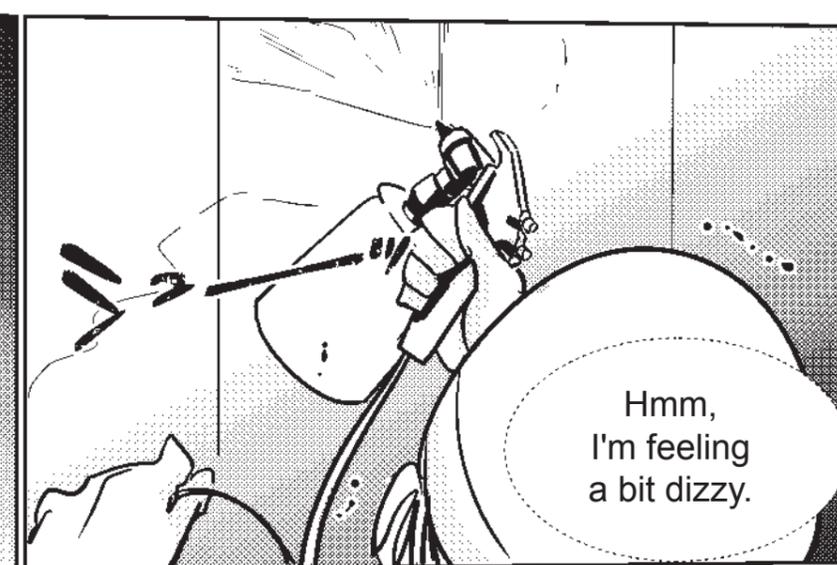
It's so hot
today, though.



I can't take it!
This gas mask
is too much!



I shouldn't
need one as
long as I finish
up quick.

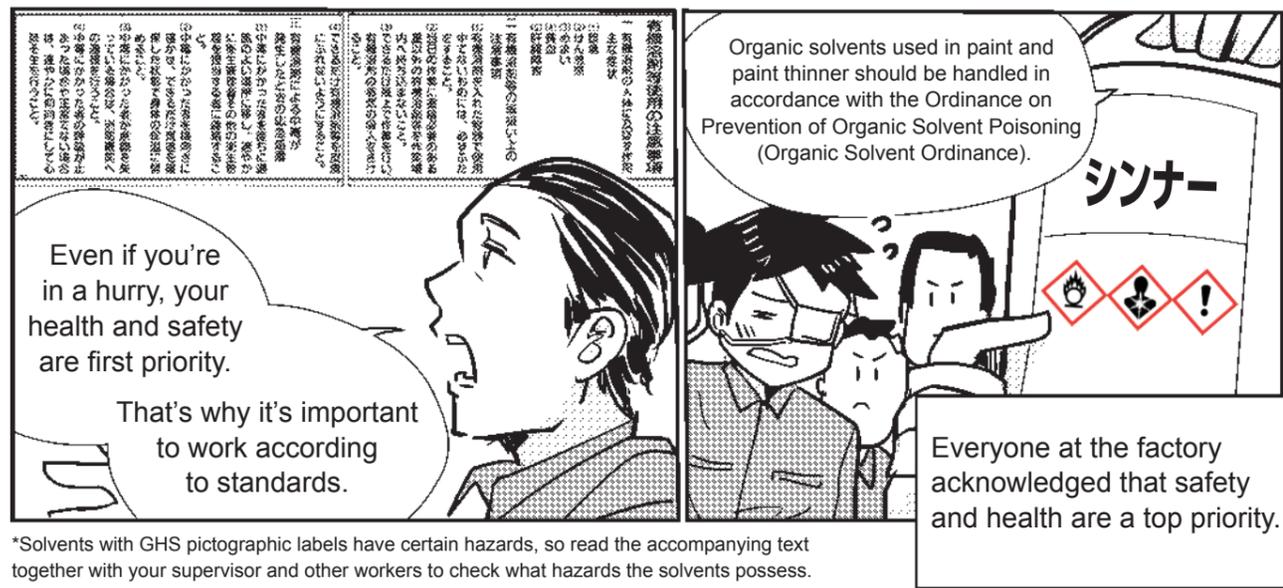


Hmm,
I'm feeling
a bit dizzy.



I'm almost
done, but

my head is
spinning and I don't
feel so good.



*Solvents with GHS pictographic labels have certain hazards, so read the accompanying text together with your supervisor and other workers to check what hazards the solvents possess.

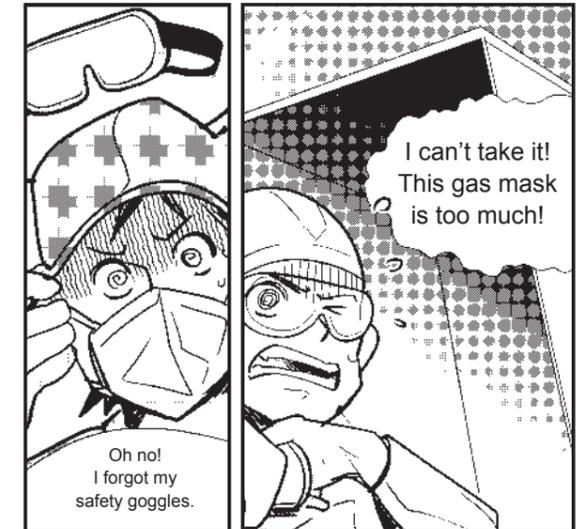
CASE 2 Summary

1 Be careful when handling paint and paint thinner!



When handling paint and paint thinner, ventilate the room and cover the containers. If there is a spill, wipe it up immediately and collect it.

2 Wear protective equipment!



When handling paint and paint thinner, be sure to wear a gas mask, safety goggles, and other protective equipment.

Report event minor accidents or incidents to your foreman or superiors immediately and seek their instructions.

TIPS Be careful of fires and getting poisoned when handling paint and paint thinner!

Organic solvents easily ignite, so flames are strictly prohibited.

[Examples]

- Tobacco
- Heaters
- Sparks from welding, cutting, and grinders
- Mobile phones (static electricity when receiving a call)

Static electricity can also cause fires, so take note of the following:

- Ground equipment.
- Pour paint and paint thinner slowly and stir it slowly as well.
- Wear anti-static shoes and work clothing.

Be careful of organic solvent poisoning.

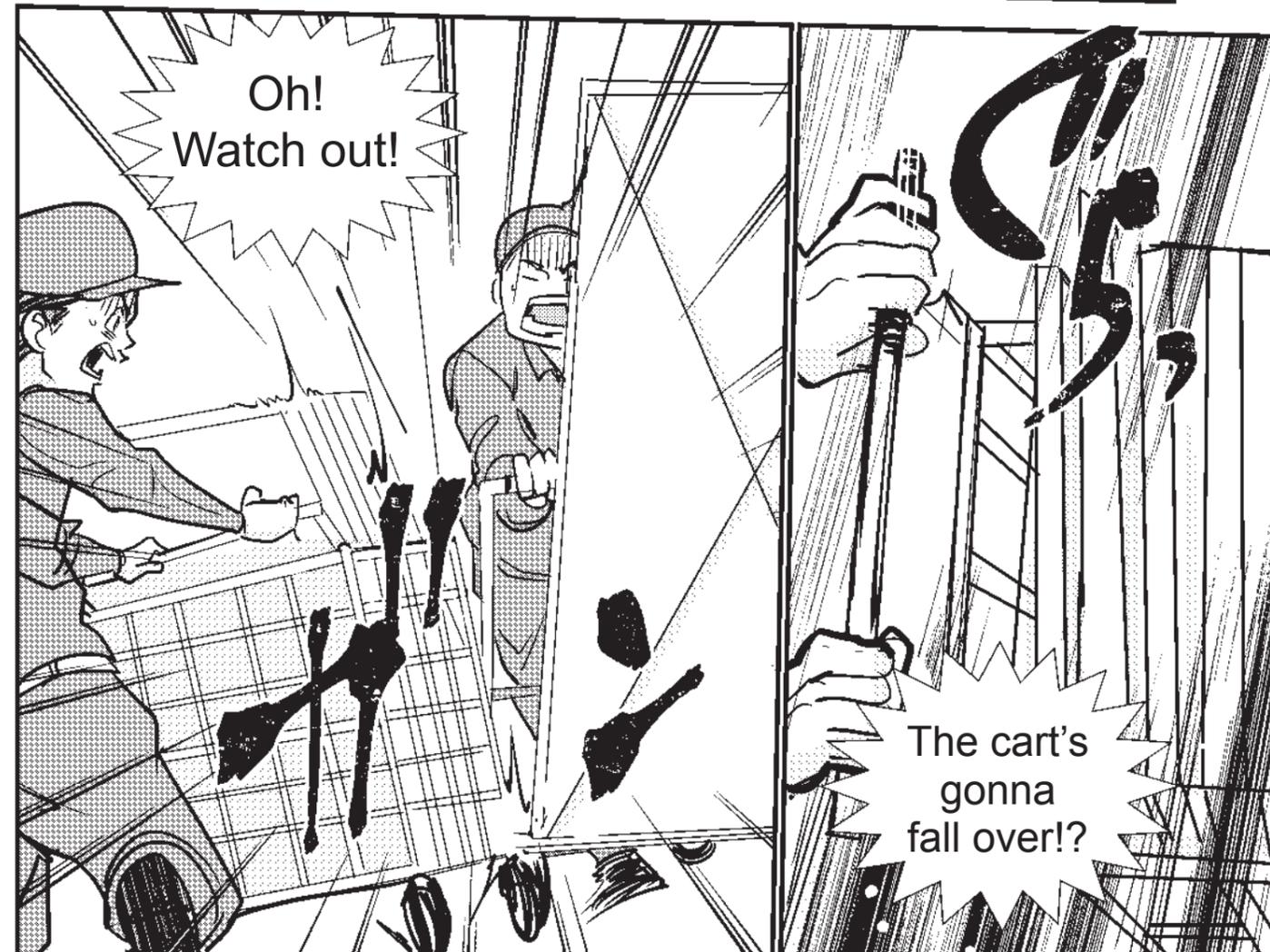
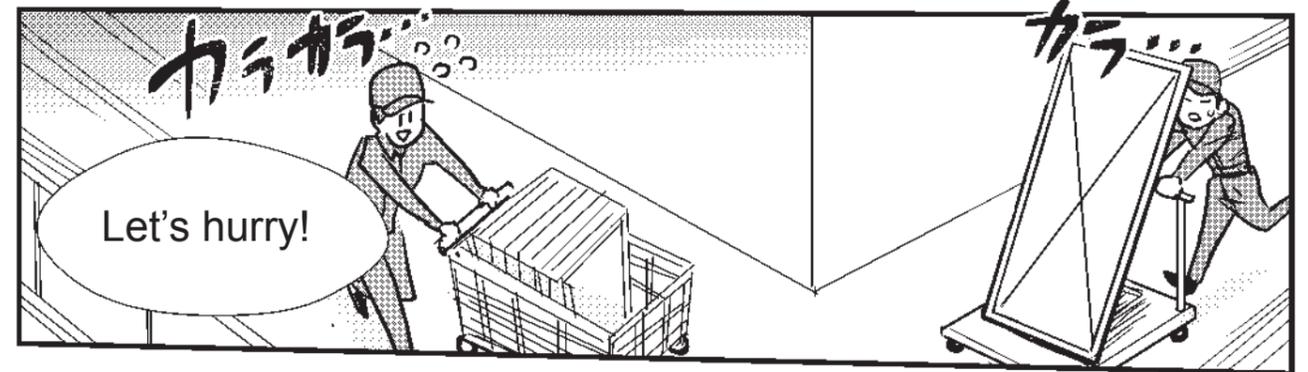
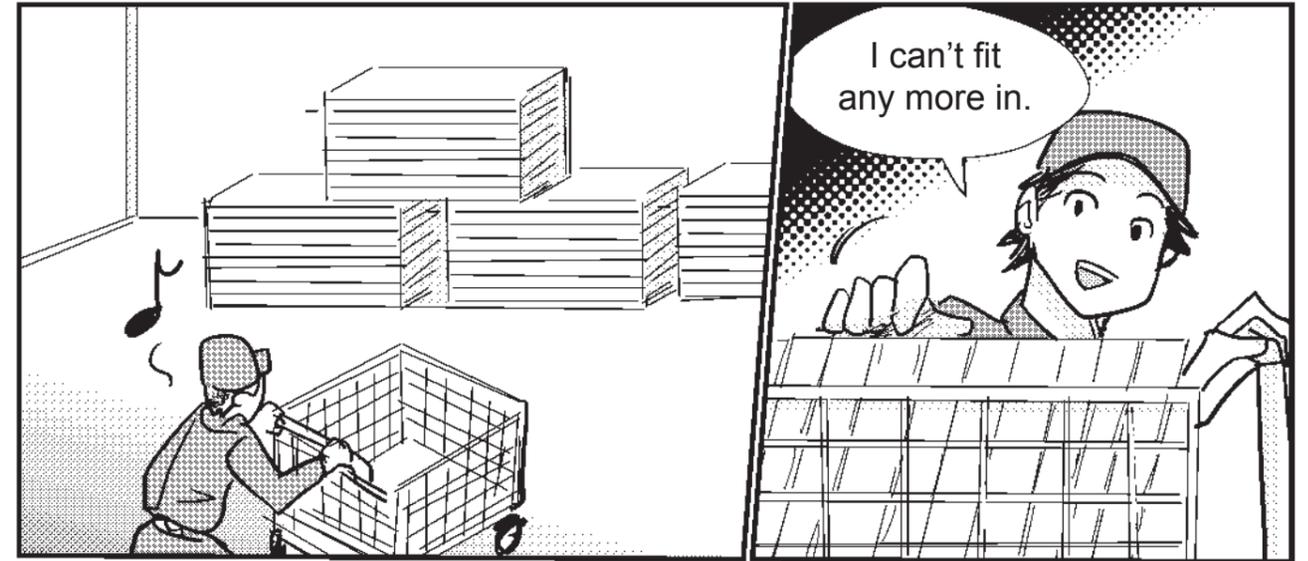
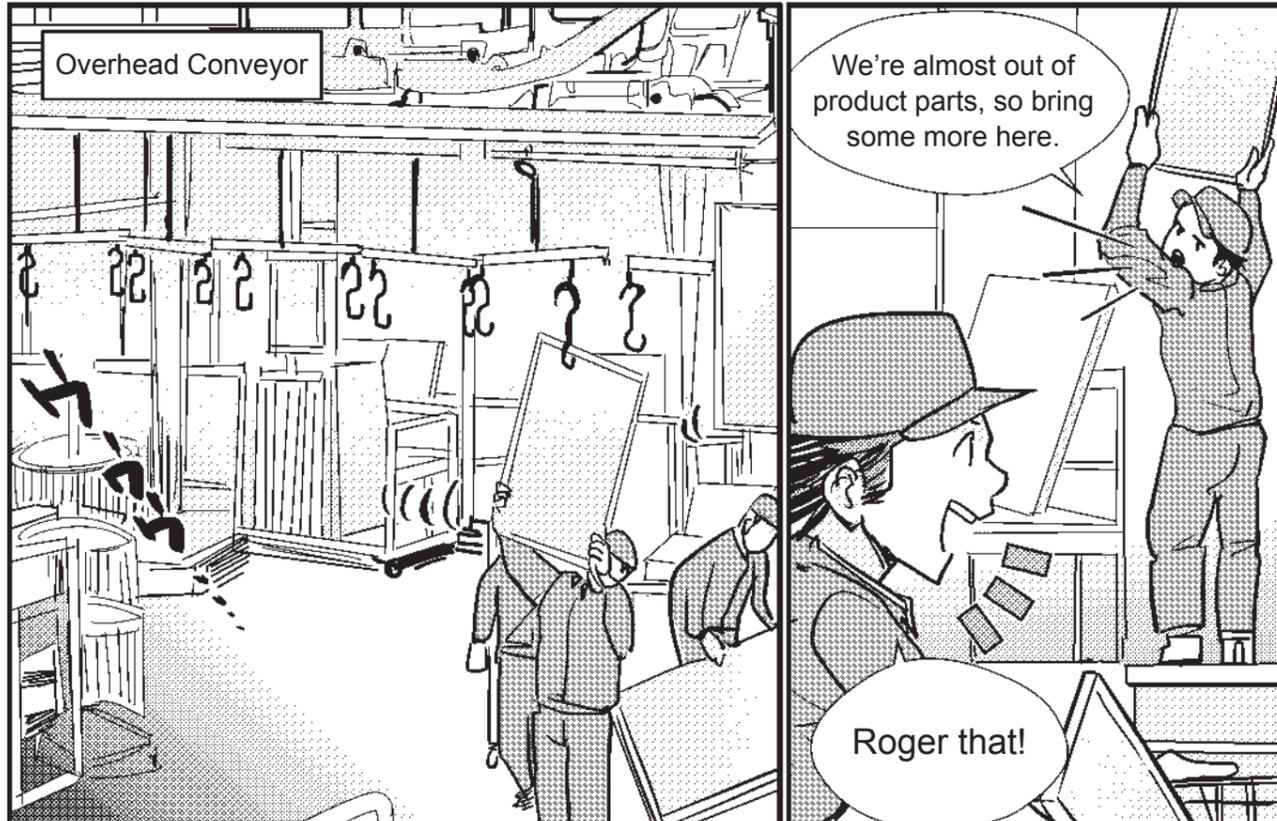
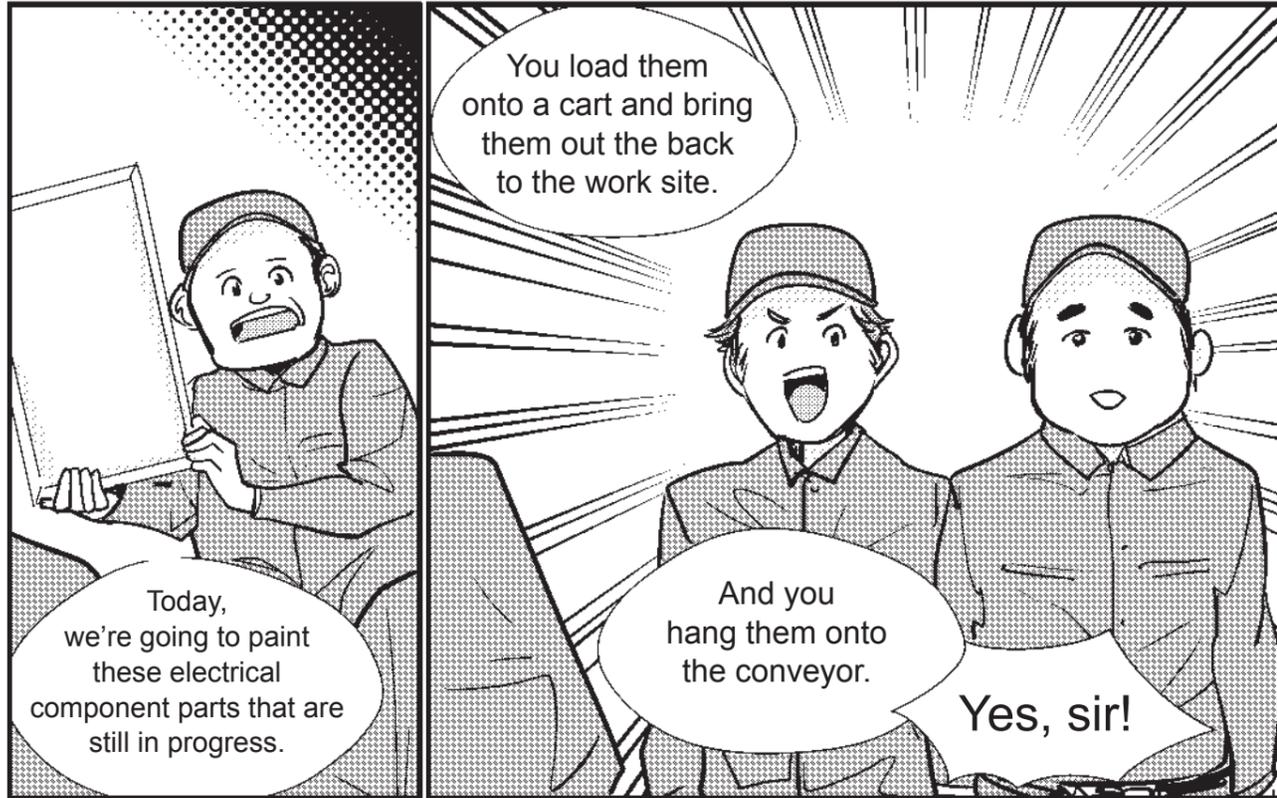
- Wear a gas mask when using paint or paint thinner.
- Close paint and paint thinner lids frequently.
- Run the ventilation fans and exhaust ducts.
- Check the Safety Data Sheet (SDS) to see what chemical components are in the product.



Reference: Learn through Manga - Safety and Health for Workers (Educational Teaching Materials) [Basics of Chemical Substances Handling]

CASE 3

Handle tools and machinery properly





Gyaah!?



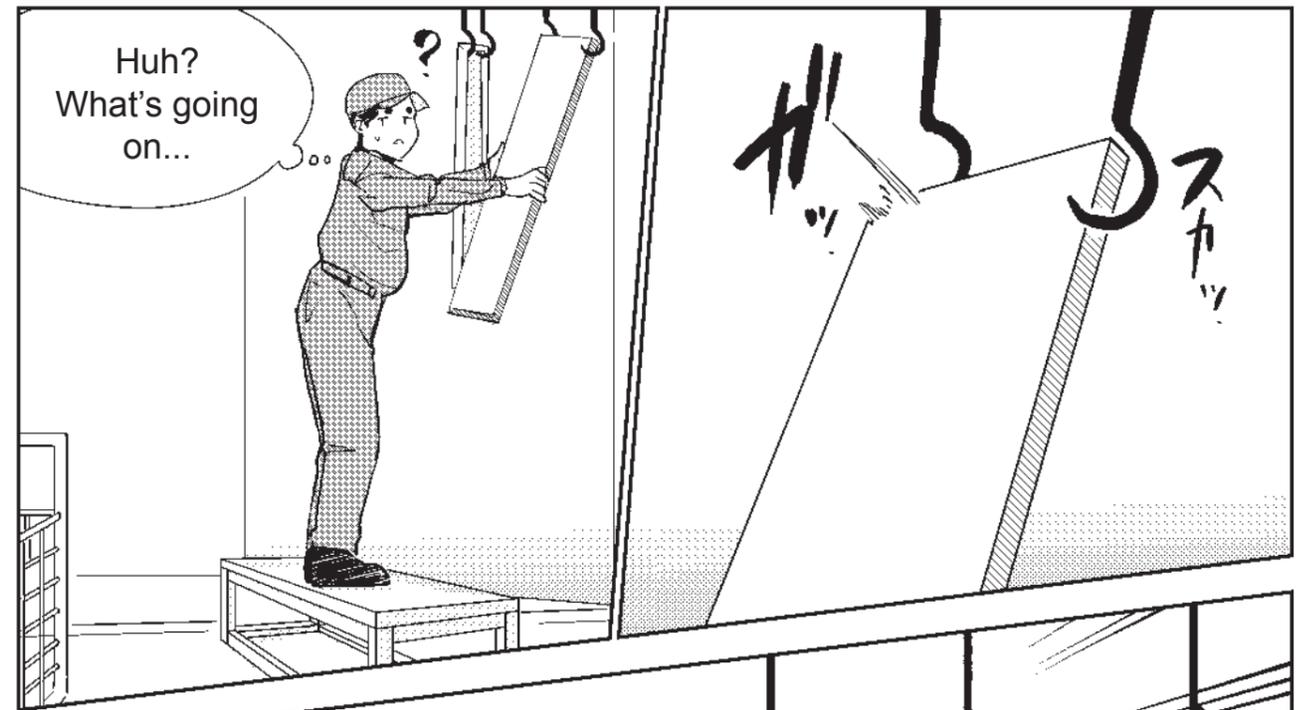
Ahh!

Are you alright?

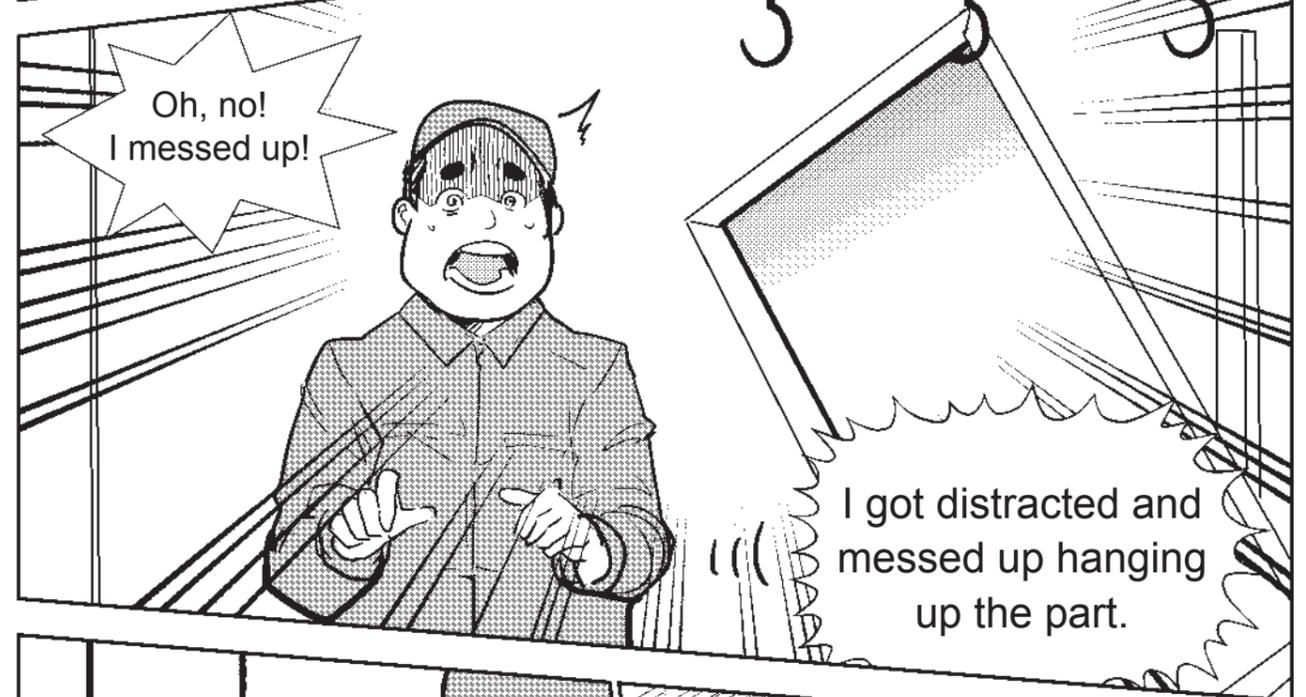
They're too heavy, I can't move! Help!



Somebody come quick! There's been accident!



Huh? What's going on...

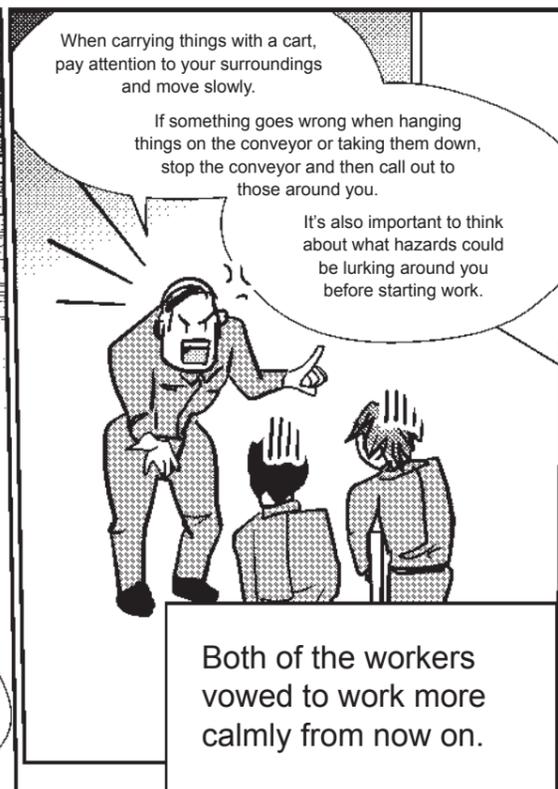


Oh, no! I messed up!

I got distracted and messed up hanging up the part.



I have to hang it up again quick.



CASE 3 Summary

1 Do not run inside the factory.



Refrain from running in the factory, stop at corners, and look both ways.

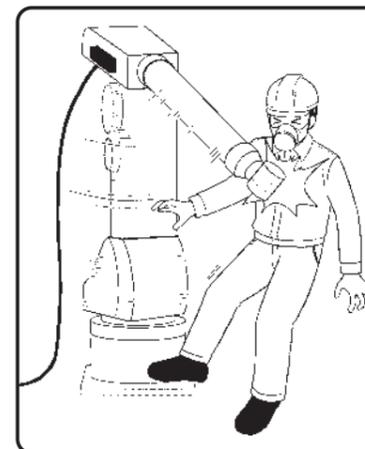
2 In the event of an abnormality, stop the machine and call out to those around you.



Be careful not to fall or get caught when hanging things up or taking them down. If something goes wrong, hit the emergency stop button and call out to those around you without panicking.

TIPS Be careful of painting machines!

Painting robots



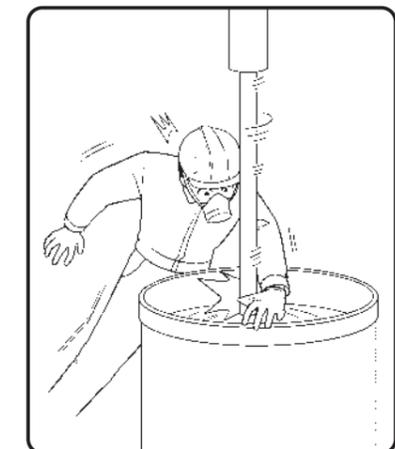
You can get hit by the arm when programming the controls or cleaning the paint gun

Roll coating machines



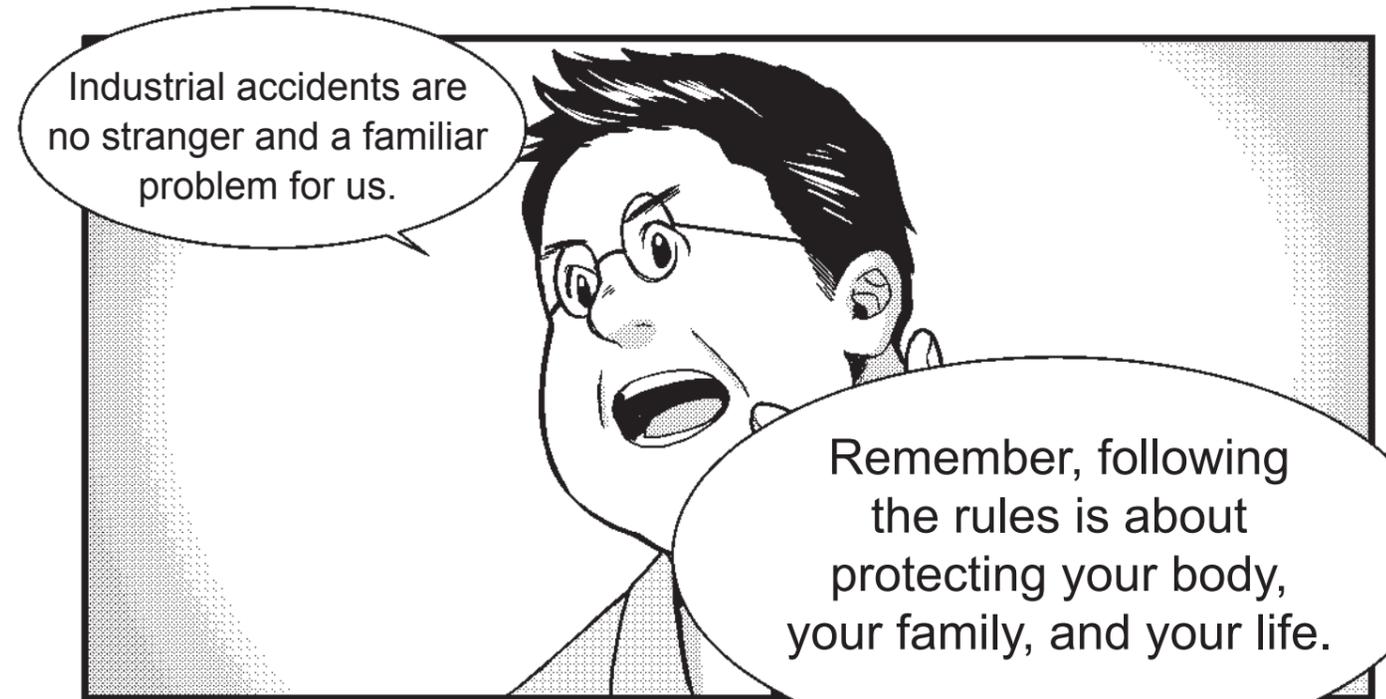
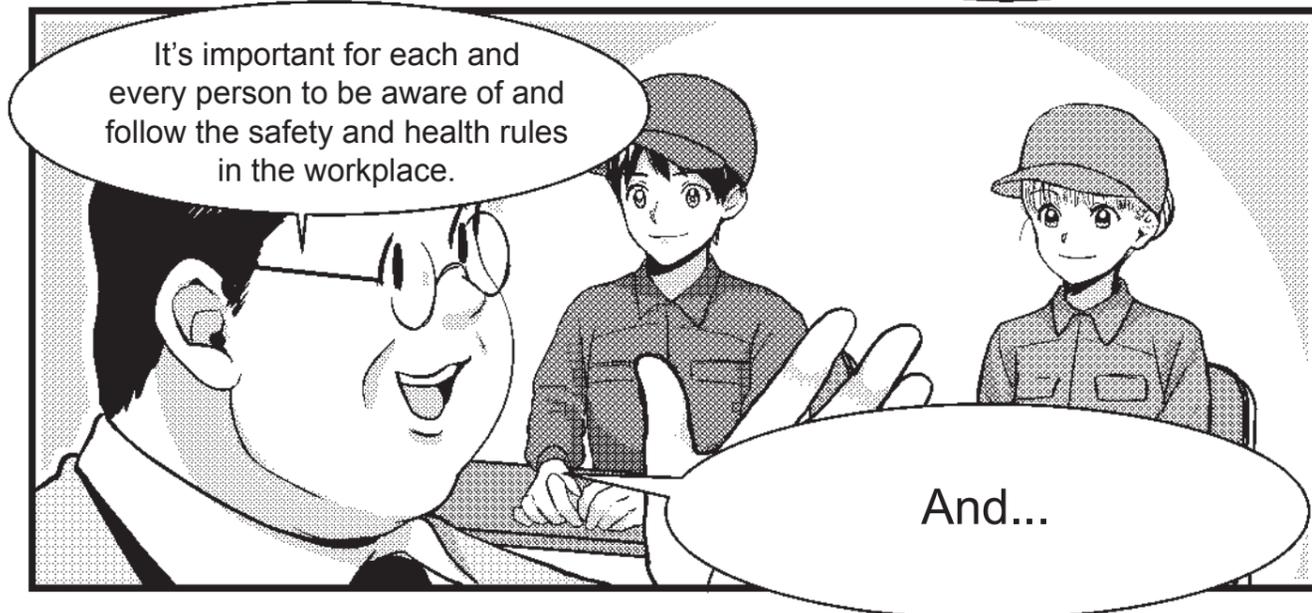
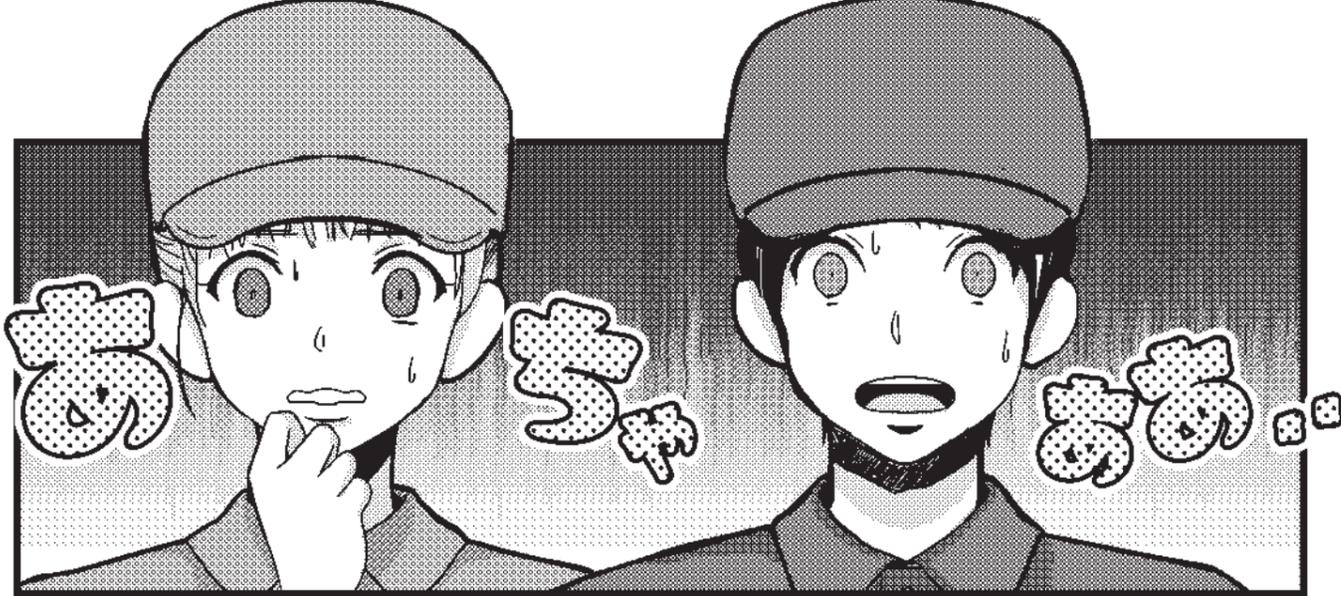
Hands can get caught in the roller

Paint stirring machines



Gloves can get caught in the rotating shaft

There are various types of painting machines. Special attention should be paid to machines that rotate and machines that move at high speeds.



Protective and Other Equipment

Use the right protective equipment for the job!



Gloves

Protect your hands from chemicals, sharp objects, etc.

Use gloves made of materials that are appropriate for your needs, have long cuffs, and are five-fingered.



Safety goggles

Protect your eyes from solvent droplets and vapors

Use a pair that is appropriate for the type of dangerous or hazardous material being handled.



Aprons

Protect your body from chemicals, dust, etc.

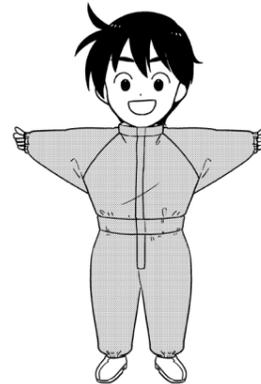
Wear them as high up as possible.



Hazmat suits

Protect your body from chemicals, dust, etc.

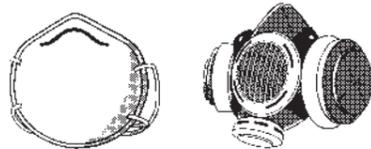
Wear the correct size for you.



Respirators

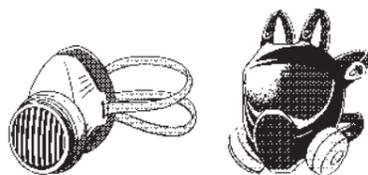
Dustproof masks

Prevent you from inhaling dust.

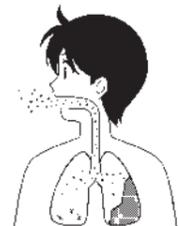


Gas masks

Prevent you from breathing in toxic fumes.



- Use one that is appropriate for the type of hazardous substance and concentration.
- Check the mask is snug (check the fit).
- Change out the mask's filter and canisters.
- Adhere to the usage limits for disposable masks.



Inhaling large amounts of dust over a long period of time may result in pneumoconiosis.

Helmets

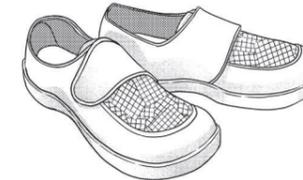
Protect your head against impact

Adjust and tighten the chin strap to prevent it from shifting around. Replace it if it's been struck even once.



Anti-static safety boots with toecaps

Eliminate static electricity and prevent sparks from being generated. Also protect your feet from heavy objects

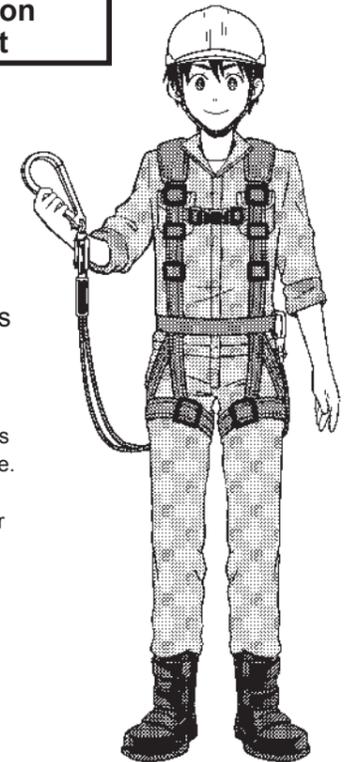


Wear a pair that is the right size for you. Use a pair that is right for the job.

Fall protection equipment

Prevent crashes and falls from high places

Full body harnesses are used in principle. Use one that is appropriate for your work environment.



Protective equipment is useless unless it's the right kind for the task and used correctly!

Key Point 1

Wear and use equipment correctly!

Make sure there are no gaps or misalignments!



Key Point 2

Use protective equipment that is the right size for you!

If equipment doesn't fit, swap it out immediately.



Key Point 3

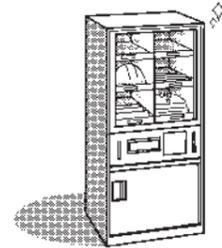
Never leave equipment dirty or damaged!



Remove dirt.



If damaged or punctured, replace it.



Store it a clean location.

Learn Through Manga

Safety and Health in Painting Work

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