

Safe Care and Handling  
of the  
Digital Still Camera



# Students Need

The educational use of IT best improves learning when those technologies are accessible, flexible, responsive, participatory, and integrated thoroughly into all public school programs. ...

all students and teachers must have ongoing access to appropriate IT within the classroom and school library or media centre to support their work. ...

all students receive equitable access to resources, including the teacher's time and attention, technology,

learning assistance, a range of roles in group activities, and choices of learning experiences when options are available.

# Access to School Technology

The essence of learning is creating original works; accessing, gathering and managing data; investigating it; problem solving; decision making; and creating and communicating new understandings. Together with pedagogical partnerships between students and teachers, student access to a wide range of IT resources will strengthen and support the implementation of all curriculum in Nova Scotia. (Vision for the Integration of Information Technologies within the Public School System)

To implement appropriate access to information technologies as part of the learning program, students must learn to handle technologies safely and responsibly. This document describes a method we have used successfully with students to orient them to the safe care, handling and use of the digital still camera supplied to secondary schools through the Information Economy Initiative.

As part of the Information Economy Initiative, Nova Scotia IEI receiving schools received a Sony Mavica Digital Still camera. Cameras, like most electronic equipment, do not like moisture, and extremes of heat and cold. They do not like to be bumped, jostled, dropped, or jarred. “Shake, Rattle and Roll” is not a camera’s theme song.

Cameras are expensive! Your school needs your cooperation to keep the camera in good working order. The camera can support a lot of fun and interesting learning activities in your school, and who wants to be without fun learning activities!?

Let’s learn how to safely care for the camera. Once you have demonstrated that you understand how to care for and use the camera safely, your teachers will feel more comfortable to put it in your hands for classroom assignments.

### First Things First

Rain, mist, snow, heavy fog and extremes of heat and cold damage cameras.

Electronic circuits may short out. Extremes of heat and cold and sudden temperature changes can cause camera parts to seize, crack and break.



Delicate camera parts can be broken, or taken out of alignment if the camera is bumped, dropped or knocked about.

So, how should you protect the camera from such situations?

Do not use the camera outdoors in the rain, heavy fog or when it is snowing unless the camera is equipped with a protective plastic rain coat.

Do not leave the camera in a vehicle or other location subject to extremes of heat or cold. Cameras require moderate temperatures. If you have been using a camera outdoors on a hot or cold day, pack the camera securely in its storage bag before re-entering a building or vehicle which is of a different temperature. Keep the camera bag closed for 1-2 hours so that the camera will reach the temperature of the environment gradually. This prevents oils from thickening, gears from seizing, and lenses from cracking.

## Safe Care of the Digital Still Camera

### Identifying the Camera

When your school unpacked the digital still camera for the first time, they should have recorded the serial number, make and model, and placed this information with a copy of the receipt in the school's equipment inventory system. The camera and accessories should be labelled discretely to support easy identification if stolen and recovered. Many schools use a labeller or engraving tool for this process.



### Managing Shared Use of the Camera

There is no perfect system to ensure that the camera is always available for teacher and student shared use. More cameras might be one solution, but not one which is easily afforded. It is also true that locking the camera in a location where reasonable planned and extemporaneous access are limited, is unworkable long-term. Teachers and students need to make the most appropriate use of the camera. Placing the camera within a staffed library with a good circulation procedure is likely the most reasonable situation to support planned and extemporaneous use.

### Lens Protection

The lens of the Sony Mavica camera would be expensive to replace if it was scratched or poked with a sharp object. Keeping the lens clean of finger prints, dust and grime is also a challenge to the longevity of the camera. Schools are encouraged to purchase a 42 mm UV filter from a local photography shop. This \$10 (approximate) investment is much cheaper to replace than the lens should it become scratched.



### Moisture Protection

Electronic equipment such as your camera, will not tolerate exposure to moisture. If it is a rainy, foggy, or snowy day and you are filming outdoors, you must protect the camera from moisture. You can purchase a manufactured camera rain coat. (Contact a camera dealer for ordering details.) Or you may make one from a plastic bag and elastic band.

### Storage of the Digital Still Camera

Your camera did not come with a storage bag. A camera bag which is waterproof, has a zip tight closure system, and padding is desirable. Most schools have purchased a camera bag that is large enough to comfortably hold the camera, an extra battery, diskettes, the charger, small lens cleaning kit, and camera rain-cover.

### The Camera Batteries and Charger

The main battery which comes with your camera costs approximately \$80. It is solidly constructed and recharges from empty in about 30 minutes. Use the recharger provided. The battery holds about a 2 hour continuous use charge. It does not contain a "memory" as many rechargeable batteries of the past had. It does not need to be fully discharged prior to charging. The charger provided with the camera will not allow the battery to be over-charged. This battery is the same as the one provided with the Information Economy Initiative digital video camera and may be used interchangeably in either device.

The flash unit of the camera has a separate battery. It should not be handled by students.



We do not recommend that students insert or remove batteries from the camera. This prevents accidental dropping and bumping which could damage the battery. You need to know that if “somehow” the battery is out of the camera and it falls to the ground, you must understand and follow these directions:

Inserting a *damaged* battery into a camera may ruin the camera. More importantly, improper handling of a *damaged* battery could result in personal injury.

- Visually inspect the battery where it lays without touching it.
- Observe carefully to see if the battery shell seems cracked or dented.

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If **the battery case is damaged**, do not pick up the battery in your hand.

Leave the battery where it is and call for the teacher’s assistance.

Use a metal dustpan and broom to move the battery to a well-ventilated location and dispose of the battery safely.

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If a visual inspection of a dropped battery reveals **no evidence of cracking, breaking or denting**, do not pick up the battery in your hand.

Leave the battery where it is and call for the teacher’s assistance.

Use a metal dustpan and broom to move the battery to a well-ventilated location for observation.

If after several days, no evidence of leakage is noted, the battery is likely safe to use.

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### Care of the Viewfinder (video screen)

Your hands and fingers contain natural oils which leave fingerprints on the delicate video screen of the camera. The best advice is to avoid touching the video screen. Keep sharp objects away from the video screen to avoid punctures or scratches.

NEVER spray any liquid on the video screen. The chemicals in window cleaner spray, for example, will ruin the emulsion of the screen. Fine particles of the spray may seep into the camera electronics and cause corrosion or other damage.

To properly clean the video screen, use a photographic lens cloth or lens tissue. These cloths are lint and dust free and may be purchased at any photography store. A photographic lens cleaning solution may be sprayed on the lens cloth. Ensure that the cloth is damp only.

Do not attempt to clean the video screen (viewfinder) using baby wipes, kleenex, paper towelling, clothing, etc.

### **Holding the Camera**

When you take the camera from its bag, place the camera strap around your neck. Check that the strap is well secured to the camera. Hold the camera at the centre line of your body when carrying it.

### **Making the Image**

Hold the camera with two hands, close to your body to avoid camera shake. Power the camera on, frame and focus the subject and press the button located on the top, right of the camera.

### **Walking with the Camera**

Ensure that the camera is powered off and that the lens cap is in place. Keep the strap around your neck. Hold the camera with one hand at the centre line of your body to prevent it from swaying and possibly hitting a wall, locker, or objects in your environment.

### **Powering the Camera On and Off**

Hold the camera securely with the strap around your neck.

Use your thumb to gently press in and push down the power tab. This powers the camera on.

To turn the power off, use your thumb to gently press in. Allow the power tab to move up. Remove your thumb.

### **Inserting and Removing the Diskette**

Examine the front of the camera. See the circle formed by the lens? Hold the diskette so that the metal guard faces the camera slot and so that the circle on the diskette faces the same direction as the camera lens.

### **Disk Format Needed**

The Sony Mavica camera requires a DOS formatted 1.4 Mb 3.5 inch diskette. Do not be concerned if you have Macintosh formatted diskettes. The

camera can reformat the diskette to a DOS format. Your five year old Macintosh computer will understand the DOS formatted disk. If your Macintosh computer is one supplied by the IEI project, the DOS formatted disk will be read without difficulty.

### **How to Format a Disk**

If there is any information on the diskette that you need to continue to use, save it to your computer's hard drive. Reformatting the disk destroys all information on the disk.

Insert the diskette into the camera.

Power on the camera.

In camera mode, and using the mouse, navigate to MENU and click.

Scroll to "Format Disk" and click.

Say "OK" to continue formatting the diskette. Click.

Wait until the camera has finished the procedure.

You are now ready to take pictures!

### **Removing and Reinstalling the Lens Cap**

The lens cap should be attached to the camera permanently using the cord provided.

Squeeze the tabs of the lens cap and gently pull to remove the lens cap. To replace the lens cap, gently squeeze the lens cap tabs. Fit the lens cap over the lens and release the tabs.

### **Wide and Telephoto Tab**

The wide and telephoto tab allows you to zoom toward or away from the photographic subject to fill more or less of the viewfinder without physically moving the camera closer toward or further away from the subject.

### **Focussing**

Some Sony Mavica cameras have an automatic and manual focus adjustment. The manual focus is very useful when you wish to control what exactly within the frame is in sharpest focus. You will find this feature very helpful when you are making closeups. It is also useful when you deliberately want the subject to be out of focus in order to support a particular meaning or to achieve a particular effect.

### **Number of Images/per Disk**

The Sony Mavica Camera provides several image quality settings. The higher the image quality, the more disk space each image will require. At the fine quality setting, you will be able to reliably hold 12 images/ 1.4 Mb disk. If you have taken 12 images and think that you may need additional images, switch to a new disk, or review the images on the disk and delete any which you determine will not be useful. (See instructions below.)

### **Image Resolution Settings**

Each image that you make is saved at a particular resolution. The resolution quality you select affects the level of detail in the image. If you are making an extreme long shot of a mountain in the distance which does not have much variation in colour, a lower resolution image may be acceptable to your eye. However, if you are looking to capture the vein structure of a delicate flower petal, a fine resolution quality setting will provide you with more visual information and hence a higher resolution. The higher the resolution quality of the image, the more memory the image will require on the disk. At lower quality settings your disk will be able to hold additional images. If you intend to use the images in student publications and on the web, use the fine quality setting so that more

visual detail (information) is saved.

### **Reviewing Images in Camera**

One distinct advantage of the digital still camera over a more traditional film camera is the fact that you may see your images immediately. No expensive film processing. Less worry for the novice image maker that they are “wasting” film as they experiment during their learning. To see the images that you have made, move the switch from “camera” to “play”. Use the mouse and the on screen arrows to move through the images. If your disk is quite full and you wish to move quickly to a specific image, select “index”. A small version of 6 images at a time will appear. Use the arrows to move to the image you wish to see in full view. Click with the mouse.

### **Deleting Images You do not Require**

When in the field and faced with a potential shortage of disks, students may wish to delete some images to make room for others. In “play” mode, use the arrows to move to the image you wish to delete. Go to “Menu” and click. Navigate to “delete” and follow the confirmation instructions. To resume making images, switch into “camera” mode.

### **Lighting and the Use of the Camera’s Built-in Flash**

The Sony Mavica camera comes with a built in flash. The button which turns the flash unit on or off is located to the left of the viewfinder. Because the flash is so close to the lens, the light will likely bounce directly into the subject’s eyes and produce an image with dreaded “red eye”. To avoid this problem, try to avoid using the flash when photographing people and animals. If you can photograph people and animals in the outdoors, you will generally be more pleased with the image quality. The light from the sun produces truer colours than can be achieved under classroom fluorescent lighting. The light outdoors will generally be strong enough that a flash unit will

not be required.

### **Avoid Shooting Directly into a Light Source**

When shooting indoors or outdoors, try to avoid shooting into the source of light. The camera reads an average of the overall brightness of an area to be photographed and adjusts settings automatically as you take the picture. If you shoot into the light, your subject will appear to be underexposed (dark) and the background around the subject will lack rich colour or will appear “bleached”. A better arrangement is to have the light fall into the subject in what is called “Portrait” lighting. If you can manage to have this light fall into the scene through a dusty window, the light will appear soft. Such lighting is generally flattering to the subject.

Another alternative is to have the sun behind you when you shoot. The disadvantage is that people often squint if the light is too bright.

### **How to Reduce or Eliminate Camera Shake**

There is very little that is more frustrating than

a well composed image of an excellent subject that is ruined because it was difficult to keep the camera still while making the image. The blurr in your image likely was caused by camera movement as the image was made. The effects of camera shake are most noticeable when making extreme close ups, and when using the telephoto tab.

To reduce the occurrence of camera shake, you must find a way to keep the camera still. If you do not have a tripod, brace yourself against a steady object when shooting. A tree, car with its motor off, or a table top will do. Better still, encourage the school to buy a sturdy tripod for the camera.

### **Shooting Indoors vs Outdoors**

Your camera will provide you with its best colour interpretation of the environment under natural lighting. Whenever possible, shoot subjects outdoors.

Typical classrooms have non-colour balanced flourescent lighting. This light has a green cast and will make white and light coloured objects appear to have a green tinge.

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# THIS IS A TEST

To prepare for this test, examine the camera carefully; read and understand the booklet.  
Be ready to demonstrate safe care and use of the camera.

## Who Wants to Operate the Camera!

For \$0 000 000 or the right to be in the same room as  
the camera . . .

Where is the power switch  
and how do you turn the  
camera on?

How do you remove and  
attach the lens cap?

How do you properly insert a  
diskette into the camera?

How do you format a diskette  
inside the camera?

When you return to the  
school after shooting pictures  
outdoors in 0c weather, how  
must the camera be treated  
and why?

How does moisture affect the  
camera?

How should students handle  
the camera batteries?

Under what circumstances  
should students remove the  
lens filter and why?

When should you use the  
camera strap and why?

**BEWARE!**

There are  
several  
**TRICK**  
questions!

How should you hold the camera when walking?

If you have a choice between shooting under fluorescent or natural light, which will give you the truest colours?

How should you clean the viewfinder of the camera?

At what resolution should you set the camera if your images will be used in a publication?

If your disk is full of images and you need to make one more image, explain how to review and delete individual images inside the camera?

Where is the manual focus button and when would you likely want to use it?

What causes people to have camera "red eye"? How can you avoid "red eye"?

How do you switch from "camera" to "play" mode?

Why were you asked to study this booklet?

What attitudes and behaviours do your teachers need to see you model before they will be comfortable to have YOU use the camera?

The answers to these and other essential questions can be found in the preceding pages of this booklet!

**PASS  
MARK**

**100%  
and  
Appropriate  
ATTITUDE  
and  
MODELLING  
of  
Safe Care  
and Use of  
the Camera**

**NOW  
and  
OVER TIME!**